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BETTER FRUIT

May 1907

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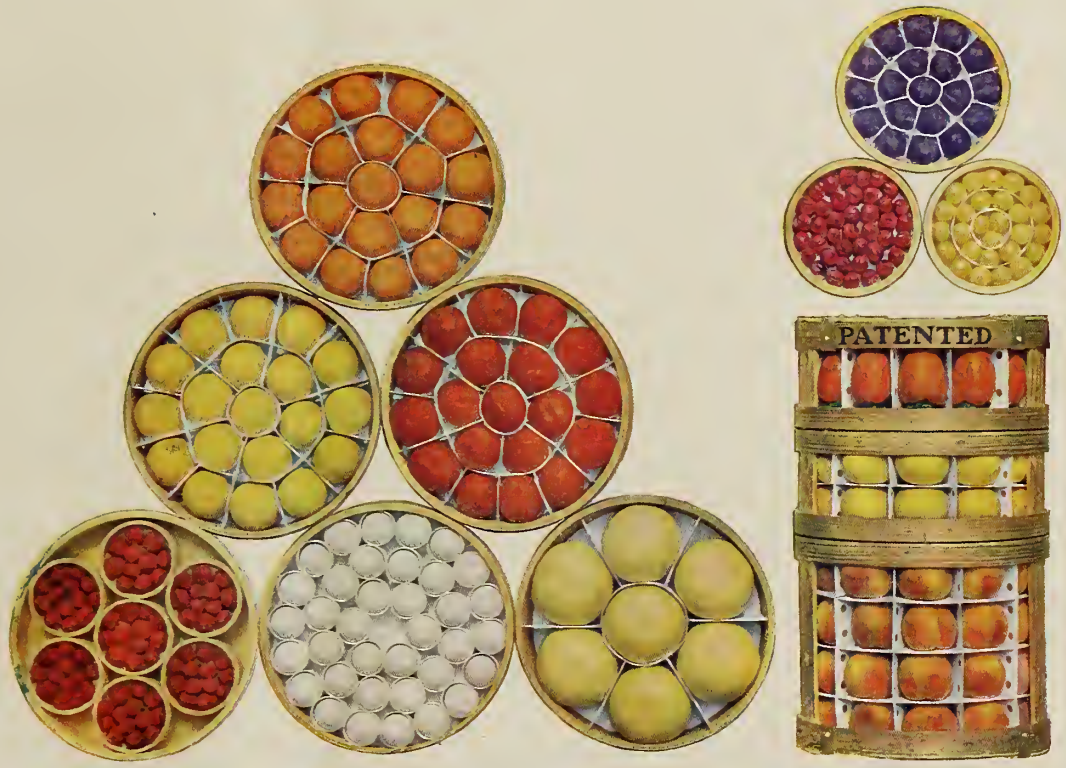

CROSS SECTIONS OF STOKELY'S CRATE SHOWING METHOD OF PACKING FRUITS

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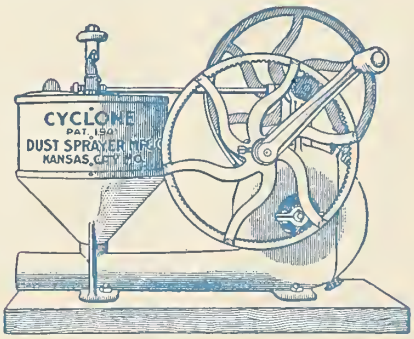

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8:50	TROUTDALE		5:25
9:12	BRIDAL VEIL		5:02
9:41	BONNEVILLE		4:32
9:53	CASCADE LOCKS		4:20
10:06	WYETH		4:06
10:33	HOOD RIVER		3:40
10:45	MOSIER		3:28
11:20	THE DALLES		3:00
11:59	*Arrive* BIGGS	*Leave*	12:15

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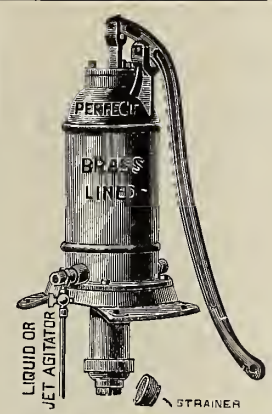

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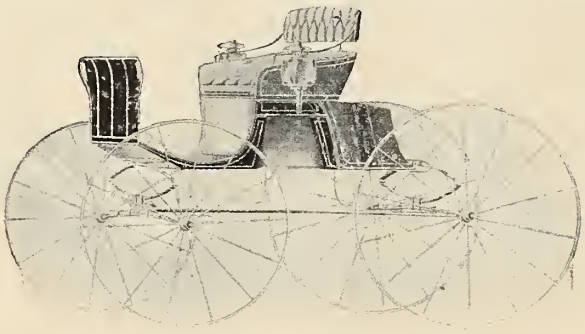

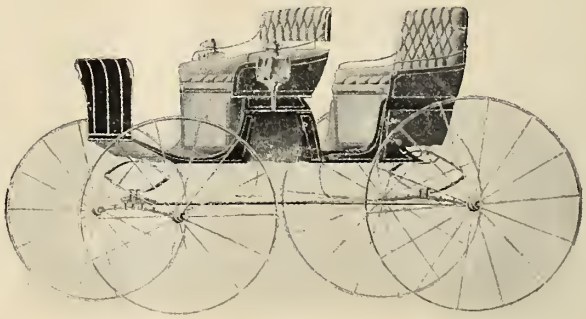

BETTER FRUIT PUBLISHING CO., HOOD RIVER, OREGON

Prizes will be delivered free of charge to any railroad station in the United States or Canada designated by the winner.
References: Butler Banking Company, First National Bank and Hood River Banking & Trust Co., Hood River, Oregon.

BETTER FRUIT

A MONTHLY ILLUSTRATED MAGAZINE PUBLISHED IN THE INTEREST OF UP-TO-DATE AND PROGRESSIVE FRUIT GROWING AND MARKETING

MY EXPERIENCE IN THE USE OF DUST SPRAY

BY E. L. STEWART, OF PROSSER, WASHINGTON

I HAVE been asked by your honorable secretary to give an account of my experience in the use of dust spray in combat with the codling moth; also to preamble the subject with a history of my six-acre apple orchard at Prosser, in the Yakima Valley. I never had the advantages of even a common school education; all my opportunities in that line consisting of a three to six months term of country school each winter until I was sixteen years old, when I went to work as a railway telegraph operator and station agent. I followed that line of work continuously for twenty-five years. With this explanation, I will ask you to kindly overlook any defects of language or composition you may find in this paper.

In 1892, while working as agent for the Northern Pacific Railway in Eastern Washington (and feeling that I must find some other means for making a living and providing a home and income for my family, for I well knew that it was only a question of a few years when the railway would be through with me), I met a representative of the Washington Irrigation Company, who pictured the advantages of the Yakima Valley to me so well that I was induced to "go and be shown." I remember very distinctly that my first impression, on taking a twenty-mile ride through the sage brush, was that I would consider that land dear at 15 cents an acre—a more desolate country I never had seen. This impression rapidly gave way to a very different one on being shown a few of the cultivated places in the Zillah and Parker districts, and in and around North Yakima, where bearing apple orchards were valued in that day at the seemingly fabulous prices of two hundred to five hundred dollars per acre.

In the hope of some day being the owner of a place of similar value, I bought a small tract on the banks of the Yakima River about 45 miles east of North Yakima, and 6 miles west of Prosser. This land was bought from the Washington Irrigation Company, on a five-year payment plan, and cost with water right $55 per acre, with a maintenance charge of one dollar per acre per annum.

I continued my work as agent and hired the land fenced, cleared and leveled; the leveling was expensive, as the land was a very rough piece; that part of the work cost me $35 per acre.

Hundred and Eight Trees to the Acre

Because of these expenses and meeting payments on the land, I was not able to plant any trees until December, 1895, when I planted six acres to Spitzenbergs and Red Cheek Pippins, one-half of each, in alternate rows, in the hope that the pollen of each variety would be more liable to be carried by bees and insects to the bloom of the other variety by thus planting, as I had read that some varieties of fruit were self-sterile and thought it a safe plan to assume that all varieties might be more or less so. These trees were planted 22 feet apart in what is known as the circular form, requiring 108 trees to the acre.

For the first three years we grew corn, potatoes, beans and garden truck between the rows, and in cultivating these crops, we gave each tree a good hoeing three and four times each season. I then quit work for the railway and moved onto the place and for the next two years we gave the orchard strictly clean cultivation, not allowing anything to grow in it. Plowing deeply each spring, we would go over it with the harrow four or five times between each watering. We gave three waterings during the season.

Up to this time (five years) we were very much annoyed by the wind blowing the soil, which was very light and loose, away from the trunk and main roots of trees, in many places exposing as much as three feet of the main roots. This kept us constantly filling in and releveling these places, but becoming very tired of this, in the spring of 1901, after having done a lot of releveling the previous winter, we seeded the orchard to red clover. This stopped the blowing out, but by the middle of that summer I was badly frightened in the discovery that our clover was at least one-third alfalfa. I had read time and again that alfalfa must not be allowed in an orchard, but I also remembered that I had read a great many statements of a theoretical nature, which I had disproved in actual practice, and being of a somewhat investigating nature, I concluded to let that alfalfa alone and watch results.

Alfalfa Theory Disproved

That was six years ago, and the alfalfa is still there; it has never been disturbed by plow or cultivator since it was seeded, and it never will be so long as the orchard keeps up its record of the last four years. It is generally said that the Spitzenberg is a shy bearer. This is not true in our orchard. We have 300 Spitz trees now eleven years old, that commenced to bear the third year planted and have borne regularly increasing crops each year since, until the past season when they packed over 3000 boxes of fancy export apples.

One more word about the alfalfa. We do not remove it from the ground, but each spring we cut all stubble and allow all growth to decay on the ground, thus furnishing a mulch of decaying vegetable matter which I believe not only keeps the soil under it in a fine loose condition, but also furnishes through decay of this vegetable mold a regular supply of potash and other plant foods to the surface feeding roots of our trees. This and the well-known ability of alfalfa to gather and store free nitrogen are the only reasons I can give for the productiveness of this little orchard.

In pruning, we have followed what is called the vase form. The trees were two years old when set out. They had been cut back to fifteen inches as yearlings, while they stood in nursery row. After planting we cut off all branches except three, selecting these with a view to a balanced head, and as far apart as possible to avoid forks; we then cut these three branches back to eight or ten inches in length. The second and third winter we pruned on the same plan, allowing each limb to increase by three, which formed the head, and since that time our pruning has consisted principally in removing water sprouts, broken and cross-growing branches. However, we have the courage to remove any limb that we believe will help the tree, always painting all cuts of one-half inch or more with a good lead paint. Now I will give

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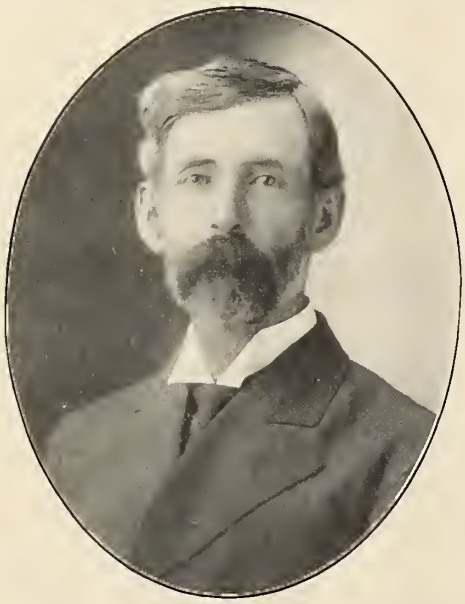
STOKELY'S CYLINDRICAL FRUIT CRATE

FRUIT PROFITS IN 1906; OUTLOOK FOR 1907

you a statement of results obtained from this orchard, and then tell you how we handle the codling moth.

Made to Pay $725 Per Acre

This orchard was planted in December, 1895, trees two years from bud. We have sold as follows of merchantable apples: In 1898, 60 boxes for $54; in '99, 200 boxes for $214; in 1900, 325 boxes for $325; in '01, 605 boxes for $605; in '02, 1108 boxes for $1020; in '03, 1400 boxes for $1400; in '04, 2650 boxes for $2400; in '05, 2350 boxes for $2768; and



E. L. STEWART
Who has successfully used Dust Spraying in his orchard at Prosser, Washington

in '06, 5625 boxes for $5991.40—a total of 14,323 boxes for $14,777.40. We also received during this time from the sale of off-grade apples $1141.55 and from the sale of vinegar $300, making total gross sales $16,218.95. Our expenses previous to 1906 amounted to $2213; during 1906, they were $1913.15, making a total of $4126.15, leaving net returns to date of $12,092.80. The sales for the years 1903 and 1904 included the furnishing of all material and the packing of the apples by buyer, but for all other years we paid all expenses. The expenses for 1906 were in detail as follows: Labor, including irrigating, spraying, pruning, scraping tree trunks, and cleaning bands, $82.50; Paris green, $64.80; lime, $30; picking, $275.60; hauling, $321.35; grading, $139.75; making boxes, $56; packing, $216.90; box shooks and nails, $526.25; paper, $200; total, $1913.15. Receipts for 1906 from merchantable apples were $5991.40 and from off grade apples $275.55; total $6266.95; less expenses $1913.15, which gives net returns of $4353.80 or over $725 per acre.

This orchard paid a net profit of $400 per acre in 1905; $400 per acre in 1904; and $200 per acre in 1903, making an aggregate net profit in four years of $1725 per acre.

Preparing Fruit for Market

Believing that this paper would not be complete without something on the subject of harvesting and preparing for the market, I will try to tell you how we do this.

In the first place, we use the pine shooks for the reason that no matter how much bulge we get in our boxes in packing, the ends never split in taking a box from the nailing press.

We use the greatest care to have the box perfectly made, with all corners true, spaces evenly divided and nails driven straight. All shooks which are imperfect are laid aside to be made up later for second-grade apples. A little care in this way, together with having a box end neatly printed by the mill making them, adds very much to the appearance of the packing. We use these boxes as field boxes to bring in the apples as picked.

A picking crew with us consists of eight men divided into three gangs—three ground men, two trestlemen, two laddermen, and a helper. We pay our help good wages and insist on having all apples (no matter what grade) handled as carefully as eggs. The ground men go ahead and pick direct into the boxes, and as our trees are low headed they get over half the apples. Trestlemen follow, each being provided with a trestle about 20 inches high, and a galvanized iron bucket with hook attached to bail. They get about one-half of the apples remaining. They are followed by the ladder men with twelve-foot step ladders who are provided with buckets and waited on by a helper who takes down, empties, and hands up buckets. Be it understood that no pouring is permitted; the pail must be set down and the apples removed by hand as a grocer would remove eggs.

From the orchard the apples are hauled to the packing shed, which is located in one corner of the orchard. Here they are taken in charge by a grading crew of four men, who grade the fruit according to our agreement with the buyer. This agreement varies slightly in different seasons; last year, for instance, we sold our apples to a firm of exporters in New York. The buyers wished to divide the Spitzenbergs into shipments for Hamburg and Liverpool, and knowing that the German preference is like that of the Yankee, for a bright red apple, and the English taste is for a pale red or yellow, we separated our fancy Spitzenbergs into two grades, bright and pale. Then we made a number two grade at the same handling, so that the graders' work consists of a careful inspection of each apple, and separating them into the proper class.

Our fancy grades consist of absolutely perfect apples of good color and without any blemish whatever, and not less than two and one-half inches in diameter. These were for export. Our number two grade consists of good sound apples, but they may be ill-shaped, off-color, limb chafed, worm sting in skin, but no worm holes, and in size not less than two and one-quarter inches in diameter. For the past four years, we have sold this latter grade to western buyers, who have placed them in Rocky Mountain towns. All apples not fit for number two grade go to the off-grade pile, where our neighboring farmers and others are allowed to help themselves at 50 cents per sack, and what is left we either make into vinegar, or feed to hogs.

How Packing is Done

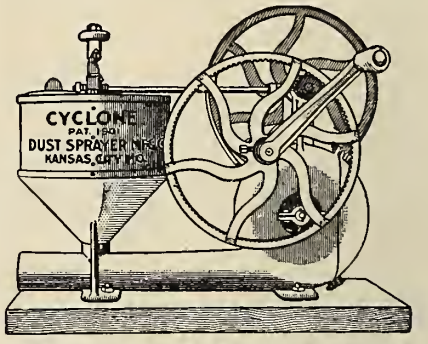
From the graders, the graded apples are carefully placed on packing tables, of which we have two. These tables are frames made of two-by-four scantling, and are three-by-eleven feet in size, covered with twenty-ounce duck, and are arranged for four packers at each table. For the past four years our packers have worked under the personal supervision of a packing foreman in the employ of the buyers, the same man having filled this position during that time. It is his work to instruct and direct the packers, inspect the apples as they come on the table, and to inspect each box before it leaves the packing table for the nailing press. In packing, the box is first lined with paper, and a mat, or straw board placed in the bottom. Each apple is wrapped in paper, being careful to have the finishing folds of the wrap come over the stem of the apple to prevent it from injuring its neighbor; between each layer, or tier, of apples is placed a mat, and over the top layer we also place one but this one carries the following printed matter, which covers the entire mat, 11 by 19 inches, and is arranged in an attractive manner typographically:

"Yakima Valley Apples

"To the Consumer: In the production of high-class apples the Yakima Valley challenges the world. Our growers use every effort to produce apples of proper color, sound, smooth, free from worms, blemishes, scale and all diseases and pests. We guarantee the contents of this box to be perfect and honestly packed. We hope you will be so well pleased that when ordering another box you will make a special effort to obtain the same brand, and failing in this that you will insist on being supplied with some Yakima Valley brand. (Signed)

"E. L. Stewart, Red Apple Ranch.
"Prosser, Washington, U. S. A."

Each box is plainly stamped with grade, variety and the actual count of apples it contains. We, in every way, take the utmost pains to put up a pack that will make "good" under the above guarantee. We have sold our apples for four years through the same buyer, and we have no fear for our future market.



The Cyclone Dust Sprayer is the best dust sprayer made; Morgan & McKaig are agents for the Northwest at North Yakima, Wash. This machine was used by E. L. Stewart, whose article on dust spraying with an illustration of his orchard and his portrait appear in this issue

MY EXPERIENCE IN THE USE OF DUST SPRAY TO COMBAT THE CODLING MOTH

We have been spraying for eight years. From 1899 to 1902, inclusive, we used the liquid spray alone, saving about seventy-five to eighty per cent of our apples; from 1903 to 1905, inclusive, we used the liquid spray in connection with the band traps, and with six sprayings, based on a knowledge of the habits of the codling moth, acquired by a careful study on our own place, we were successful in saving eighty-five to ninety per cent of apples.

During the season of 1906, we used dust spray, and the band traps, and saved

better than ninety-nine and one-half per cent of our apples free from worms.

For two or three years previous to 1906. I would frequently read short statements in farm and horticultural papers in regard to dust spray, and about eight out of every ten of these statements were against the process, and were usually given as the opinion of some prominent man, who I could see by his position was not a practical grower, and in all probability never had a spray pipe, or dust spout in his hands.

This made me suspicious of these statements, and inclined me to look with favor on the statements of the practical man who occasionally told through the papers of his success with the dust spray. It was in the hope of learning something about the use of the dust spray that I attended the meeting of this association at North Yakima last winter. There we listened to a very able report on a series of spraying experiments that had been conducted the previous season, under the supervision of our State College, but all this was along the line of liquid spray, from the nastiness and laboriousness of which I was seeking deliverance.

I Meet Dust Sprayers

I found two practical and successful growers in attendance at that meeting who were making a decided success of the dust spray. I refer to Mr. J. M. Brown and Mr. E. Remey.

I had a talk with these gentlemen and found them so much in earnest in their belief in the superiority of the dust spray that they had but little patience with a man who advocated anything else. This decided me to give it a trial, as I had rather take the word of one man who succeeds, than of a dozen who fail. I therefore bought a "Cyclone" dust spray machine with the intention of giving it a trial on a small part of my orchard and continuing the use of the liquid on the main part, until I could test the dust spray for myself. But when we went out to make the first spraying. the machine and dust worked so perfectly. and it was so plain to be seen that it would be utterly impossible for any machine to make such a fog with water as a carrier, that I concluded right there to drop the liquid and rely on the dust.

We sprayed our orchard seven times up to July 10. when on account of the difficulty in getting through the orchard with team, and believing that we had the best of the worms, we quit spraying. As previously stated, the worms got less than one-half of one per cent of our apples, so that we saved at least ten per cent more apples than we ever had saved by the liquid process.

Dust Spray Adds $555 Profit

I know that we did thorough work when we used the liquid, and had we continued its use last season, we could not have hoped for better than ninety per cent clear fruit. Knowing that our orchard paid a net profit of $725 per acre, I figure that the dust spray saved ten per cent of that amount more than the liquid would have saved, which for the six acres would amount to $435, and that is not all; six sprayings with liquid, the number we found necessary to save ninety per cent, would have cost for labor and material $237; the seven sprayings with dust cost for labor and material $117, showing balance in favor of dust of $120, which added to $435, gives $555 saved by using dust instead of liquid.

I know we made a very extravagant use of material, but having cut loose from the liquid after advocating its thorough use for a number of years, I knew our work would be watched by others, and I was determined to make good if it was in it. Most growers using the dust only use half a pound to a ten or twelve-year-old tree. We used a pound and thereby doubled the expense for material, but as it is impossible to do any damage by using too much, I wanted to be on the safe side, as the question of expense is a very small matter if you save a good crop.

Advantages of Dust Spray

To enumerate some of the advantages of dust spray, I would say our carrier, lime dust, is in itself a very valuable insecticide. First, we secure a much more thorough distribution. The air takes up our dust and spreads it perfectly on all sides of the fruit and foliage. Should a heavy rain damage it, it is quickly replaced and the bugs headed off. It is easily applied. It is cheaper. It is more expeditious. It is more effective. It adheres better than the liquid. There is no burning of the foliage, or russeting of the apple. We spray our orchard in six hours. It required six days with the barrel pump.

Red Apple Ranch of E. L. Stewart, at Prosser, Washington

I am not here to discourage anyone who is using the liquid process. If I knew of nothing better, I should continue its use myself, but I know positively, from my own practical experience that there is a better way, and I am here to tell you of it.

With the liquid spray, we wait until the bloom has fallen to do the first spraying. Now have you ever noticed that the period of bloom for most varieties of winter apples extends three weeks and over, and the bloom which comes out first has been gone for two weeks before the slower-opening blossoms on the same tree fall? And the calyx cups of at least ten per cent of the fruit are closed when the bloom has all fallen. Right here is one of the main causes of poor success with the liquid, in that, for fear of injury to the bloom you must wait until a portion of your fruit has closed its cups before you can begin to spray, and the failure to get a dose of poison in these cups results in giving the first brood of worms a good start.

With the dust, we have no fear of injury to the bloom and can do our first spraying as soon as the bloom commences to fall, our second when the bloom is half gone, and the third one just as the last bloom has fallen. In this way we are practically sure of getting a good dose in each cup.

Again, I would ask, have you ever examined under a good glass a small apple, from the size of a soup bean to that of a walnut? If so, you found it covered with a fuzz or wooly-like substance placed there by nature to protect the skin of the apple from excess of moisture. This fuzz is resistant to liquid spray, and makes it very difficult to reach the skin while the dust sifts through it very readily. Then again as the apple reaches a larger size, you have noticed that the skin becomes oily, another resistant to liquids, but a substance to which dust adheres naturally.

I have omitted a great many details of which I should like to have written, but I feel that I have already taken too much of the valuable time of this convention. I thank you for your attention.

THE WASHINGTON STATE FRUIT FEDERATION

FRUIT growers of the State of Washington have perfected a federation for the purpose of bettering the general market conditions. The organization includes representative men and associations from every prominent fruit-producing section. A board of trustees will handle the business for the entire membership. That directorate at present consists of ten members.

State Senator W. H. Paulhamus has been elected president of the board. The plan of work contemplates the employment of a competent manager to seek the best markets, study the wants of consumers and regulate the shipment of fruits to prevent overstocking and insure prices.

In the selection of Senator Paulhamus for the head of such an organization the fruit men exhibited wise business judgment. He is the man of all men in the state who should be given such an important and responsible position. He is a practical fruit grower and shipper. His experience in every department of the work is of great value to the federation. A few years ago—as the Post-Intelligencer recalls and points out—the people of the Puyallup Valley were seeking income propositions. They had homes and lands, but no crops that gave them dividends. Lands sold at $40 an acre. Now every little plot planted to berries brings good money, the residents are well-to-do, and land sells for from $400 to $1000 an acre. Senator Paulhamus has largely aided to make this change possible. He is a man of power at home and abroad. He has traveled to and from the leading market centers and mingled with the buyers and consumers of Washington fruits. He understands what the people want and has the ability to transfer that information to the growers. In every work he undertakes he enters actively upon the duties and overcomes all obstacles in the way of accomplishing his purpose. He has made a record in the state senate which no one can dispute. Always in the interest of the common people, and for a square deal to the producers, he has made friends of the fruit growers and farmers in every district of the state.

As an organizer and leader, Senator Paulhamus has been a success. He has succeeded in bringing more than five hundred fruit growers into a union of interests that has resulted in making the Puyallup Valley one of the richest sections of the world, because of the prices obtained for the fruits produced. He has been called many times to other fruit growing districts to counsel with the people on organization, marketing and other important questions. Now that he is at the head of the federation for the state, the fruit men expect results that will make of the industry one of the best financial investments for which the land of Washington is famous. — Puyallup, Washington, Tribune.

Two Hood River Strawberries

THE CROWN BORER

IN the Northwest and in Hood River the crown borer is the most serious and about the only pest or disease that occasions any material damage. From the fact that we have been more or less immune, little is understood as to what to do. The editor does not personally know of a single grower in Hood River that can tell the remedy for crown borer, consequently it is our belief that the following treatment which appeared in "The Strawberry" will be welcome information:

"The strawberry crown borer is the larva of a beetle. This larva is a whitish, footless yellow-headed grub about one-fifth of an inch long. It lives in the crowns of strawberry plants, frequently burrowing them out so much as to weaken and sometimes destroy them. The beetle is a dark-colored, snouted insect, about one-fifth of an inch long. It is unable to fly because of the membranous condition of its wings. This beetle lays its eggs on the crown of the plants in the spring. When hatched the larvae soon penetrate into the crown and work upon the interior of the plants all summer until they get full grown. A single larva will not wholly destroy the plant, but sometimes three or four larvae work upon the same crown. The only way these insects may be carried from field to field is by transference with the plants. For this reason they do more damage to old than to new-set fields. There is no relationship between the borer and the ubiquitous white grub. Preventives for the crown borer are: First, spray late in the summer with arsenate of lead, using four pounds to fifty gallons of water. This will poison many of the beetles. Immediately after fruit is picked mow off the bed and burn over. This will destroy the insects. Then turn the bed under in July and this will destroy any immature larvae that might remain in the crowns. Never set any plants from your own bed until you are rid of this pest. We have never seen a crown borer on 'The Strawberry' farm. The crown borer is not partial to any particular variety of strawberry."

SPRAYING FOR THE CODLING MOTH IN COLORADO

BY A. L. ROBERTS IN "THE COLORADO FRUIT GROWER"

I SUPPOSE the reason why I have been asked to furnish a paper on "Spraying for the Codling Moth" is because a good many people believe that I have been quite successful in this line. For several years my apples have been very free from worms. Three years ago, with a crop of 12,000 boxes, probably not much over one box of apples were wormy. The next year there were almost ½ of 1 per cent of wormy apples. Last year I was equally successful.

I have heard it said that it is the belief of some of our fruit growers that Art. Roberts has something he puts in his spray that kills the worms and he won't tell anybody what it is. Now, I do have something I put in my spray that kills the worms, but it is not true that I have any secret about it, or that it is any new or strange compound.

I do not claim, either, that my orchard has been the only one in the valley that has been free from worms, or that I have any special knowledge on the subject of spraying for the codling moth that is new or not possessed by others. In fact, I have only followed the instructions of Professor Gillette of the Agricultural College at Fort Collins, with slight deviations. I learned the theory from him, but perhaps acquired something of the method of application that I now use from several years of experience in the actual work of spraying. And it is my intention in this paper to tell you simply the way I spray and why I spray that way.

It is my belief that every owner of an apple orchard in this valley can have his apples almost entirely free from worms every year if he will; but he must give the closest personal attention to all the details of spraying, especialy the first spraying, and must be prepared to do it on time.

The success I have had in fighting the codling moth I attribute to three reasons: Because I sprayed on time, because I sprayed thoroughly, and because I used arsenate of lead. These have become to me the essentials for best results in fighting the codling moth.

Whether I spray on time or spray thoroughly are matters of my own experience; hence give me arsenate of lead and I cease to fear the codling moth.

Nevertheless, although arsenate of lead has become to me an essential for the best results, it is not by any means an essential for good results. To make the rule more general, I might say that the three essential things in fighting the codling moth are: To use the proper spray material, to spray on time, and to spray thoroughly.

Let us take up the first essential, or the proper spray mixture. I have expressed a decided preference for arsenate of lead. Why? Because I believe it sticks better than any other poison, but mainly because I can spray a tree as long as I want to without injuring the apples or the foliage.

I have used Paris green with considerable success; but my experience with it is that it settles badly in the spray tank, that it does not stick well, and that it will burn the foliage if applied too freely, or if just the right amount and quality of lime is not used with it. However, I should use it if I could get nothing else, and should not expect to have more than 10 per cent of wormy fruit.

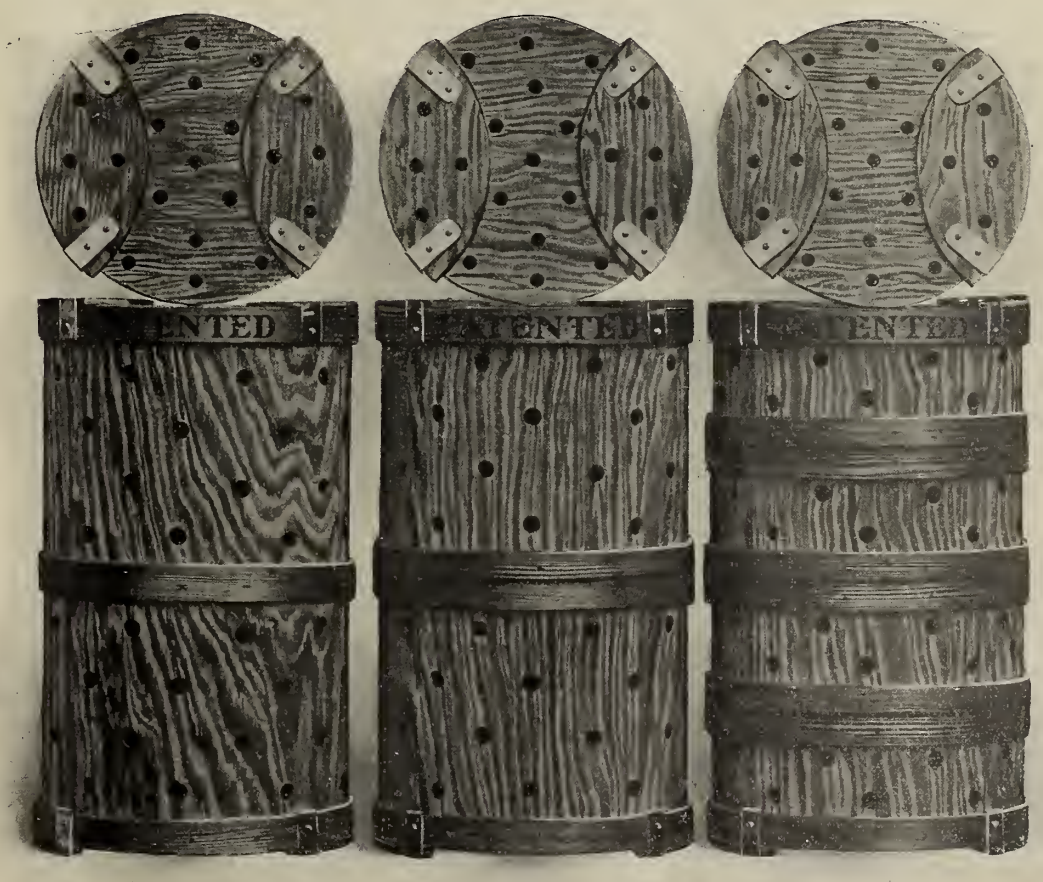
White arsenic is perhaps better than Paris green, and the next best poison to arsenate of lead. I have always used the Kedzie, or the "1-1-4" formula: One pound of white arsenic, one gallon of water and four pounds of sal soda; boil 15 minutes, strain, put in a jug, label "Poison"; use one pint to one barrel of water, to which add two pounds of freshly slacked lime. That is the way I remember it. It is the cheapest of any spray mixture for codling moth, and I have had very good luck with it. But in my opinion it has one serious objection: It will injure the foliage, and seemingly stunt, for a time, the growth of the trees if you get too much on. And this may be done in either of several ways: By getting your spray mixture too strong with poison, by allowing your spray mixture to settle, or, what is the most objectionable of all, by simply spraying too long on one tree. It seems to be an accumulative poison—keeps collecting, so that the longer you spray a tree, the worse you are liable to injure it. Therefore, my experience is that it is very hard to follow the rule of spraying thoroughly with it and not do some damage.

If I were compelled to use it again, I should be very careful not to use it too strong, for I should prefer to use a weaker solution and be able to apply it in a more thorough manner than to use a strong solution and not be able to apply it thoroughly for fear of burning the foliage.

But, as I said before, I much prefer arsenate of lead for the reason that you can use it as freely as you wish without danger of injury to the tree.

This brings me, I believe, to the second essential: Spraying on time, which applies mainly to the first spraying. I will not dwell very long on this, for I doubt not all fruit growers know that the calyx closes in a short time, and understand the reason why it is necessary to fill the calyx cup with poison before it does close.

It may not be so generally noticed, however, that whereas apple blooms come in bunches of five to seven or eight blossoms in a bunch, only the first blossoms to come out ever come to be apples. That is, these bunches of blossoms, five to eight in each, usually produce only one or two apples. Occasionally there are three, and rarely four. The first of these blossoms to come out are, therefore, the first to close their calyx; their stems grow strong first, take all the sap,



Three-hoop Crate Four-hoop Crate Eight-hoop Crate

and cause the other blossoms to wither and drop off. It is these first blossoms, therefore, whose calyx must be filled with poison, if we would keep our apples from becoming wormy. It then becomes necessary to make full preparations before spraying time to spray one's whole orchard in time to catch these first blossoms before their calyx close if one would have the best results.

Then, too, there is some difference between the different varieties as to the time of closing their calyx. The Jonathan and Missouri Pippin close quickly, while the Ben Davis and Geneton are more slow about it. The Peewaukee closes very quickly. I used to find them the wormiest of all my apples every year until I found I was spraying them after their calyx had mostly closed. Since, I make it a point to spray them immediately, just as soon as the petals have mostly fallen, and so find at picking time they they are no more wormy than the apples of other varieties.

The kind of varieties would, then, also have an influence on the length of time that may be safely spent in the first spraying before there is danger of the calyx being closed. But I find that in my orchard I have only five or six days, and do not believe that the proper first spraying period for most commercial orchards is much over six days.

It is my observation that among the fruit growers around Paonia, not much over half of them do this first spraying quite soon enough. A few of them are usually way late, not beginning until the first have entirely finished.

For the other spraying for codling moth I do not think the exact time makes so much difference. I notice that Professor Gillette usually recommends a second spraying in ten days, but it suits me better to wait about thirty days and give a third spraying in another thirty days. With us that usually makes the first spraying come about May 10, the second about June 10, and the third July 10.

Professor Gillette tells me that the reason why I do not need to do the second spraying is because I do the first so thoroughly that it takes the place of both the first and second spraying. Now, if this is so, if it is possible to do the first spraying so thoroughly that the second is unnece sary, I believe I would prefer to do it that way.

It must be noticed, however, that Professor Gillette recommends the first two sprayings close together and then skips to the last spraying in July, while I have usually put in a second spraying in June. Last year I left out the middle spraying entirely, only spraying twice, and had very good results. Hence, the question is which is best: To do the second spraying in a week after the first, or in a month after the first, or leave it out altogether? My answer would be that if the first spraying is not done just right and in a most thorough manner, that it would certainly be better to do as Professor Gillette recommends and do the second spraying in a week or ten days. But if the first spraying is done just right, then I should prefer to do the second spraying in about thirty days, as I have said.

Doubtless if one's orchard is free from worms, and if the first spraying is done well enough, it would be safe to leave out the second spraying entirely. Still for the present, at least, I believe I shall make it a rule to do three sprayings.

This brings us to the third and last essential in fighting the codling moth—to spray thoroughly. I have just said that it is my belief that not over half of our fruit growers spray quite soon enough, and now I will add that I do not believe one-third of them spray quite thorough enough. It is easy to acquire a belief that it is necessary to spray thorouhgly, and quite a different matter to learn just how to do it. The first thing necessary is a good spray outfit, but I do not wish to dwell on that, because there are many good spray pumps and outfits, almost any of which will do the work all right if properly handled.

I do not believe, however, that I should like any system in which the pumping power was derived from the movement of the spray outfit from tree to tree. At least, not until I was assured beyond the shadow of a doubt that sufficient power would be furnished so that I could spray a tree as long as I wanted to without driving up.

I believe that it is also a good plan to always have an agitator going, so that the mixture is prevented from settling. A hand-lever agitator that can be shaken up every tree or two, I have found satisfactory.

At the meeting of the Horticultural Society at Grand Junction, I found that among the growers of the Grand Valley there is a wide difference of opinion as to the kind of spray nozzles that is the best to use. Perhaps the nozzle most in favor there is the Seneca, or Bordeaux, which is much the same. Here at Paonia we think the Vermorel is the only one to use. I surely favor the Vermorel, because it scatters the spray better and covers everything more thoroughly than any other nozzle.

One amazing fact, however, was brought out at the Grand Junction meeting. One man there who had rather extra good success in fighting the codling moth did not use a spray nozzle at all, but used a garden-hose nozzle, which shot a solid stream. They said he used a high pressure and just shot the spray right into the tree so hard that he often knocked the leaves and little apples off. Sometimes the stream would go clear through the tree and forty feet on the other side of it. Still, he had good results and the reason is plain too, I think. He simply wet the tree down better in that manner than some of his neighbors did using the nozzles. But that is certainly not the easiest or best way to wet the tree thoroughly. Undoubtedly a large per cent of the spray was wasted. But it only furnished another proof that a tree does need to be wet down thoroughly to get the best results from spraying, even if it must be done with a garden hose. Next, let us notice that the calyx end of the little apples at the time of the first spraying stand up, or outward. They never point downward. Therefore it is easier to fill the calyx with poison by shooting the spray right into them with not too fine a nozzle from an elevated position, as from the top of the spray tank, than it is to fill them by spraying from the ground. I therefore do my spraying from the top of the spray

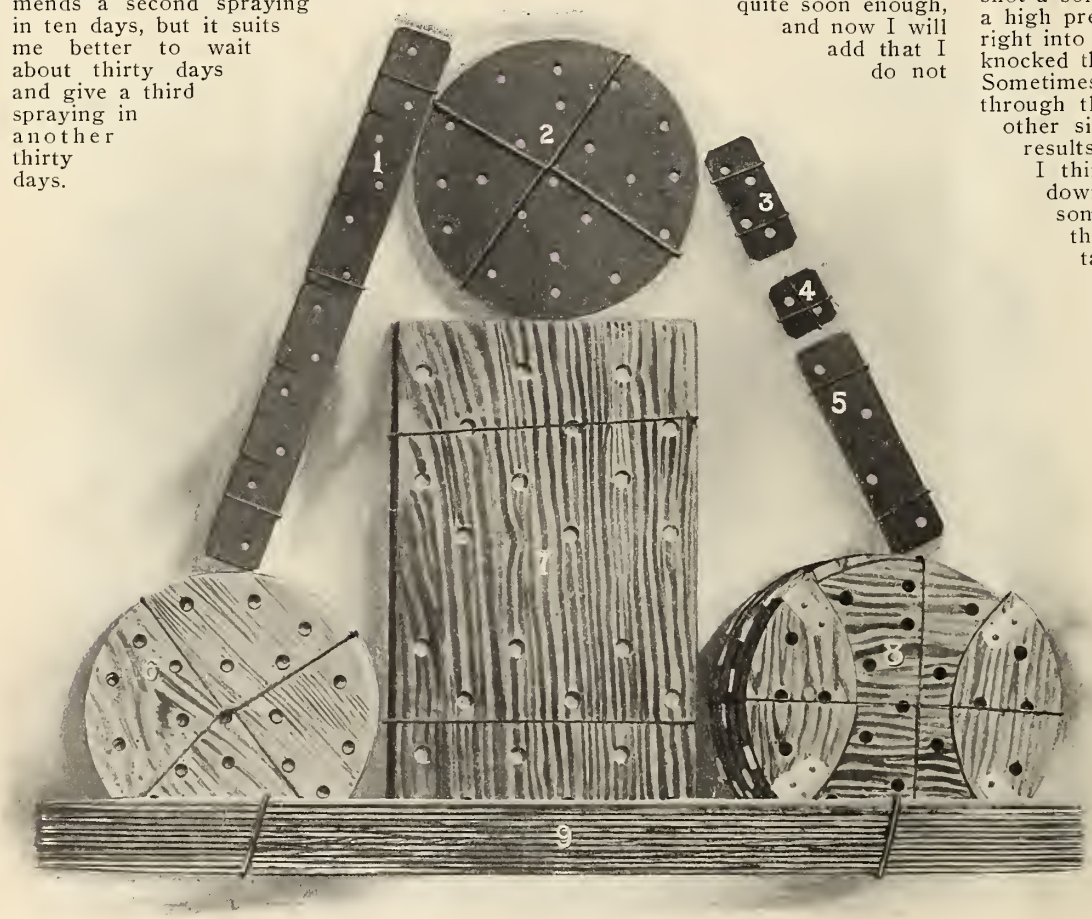


Illustration of Parts of Stokely Crate Knocked Down for Shipment

tank. At the back of the tank I have an extension for one man to stand on while spraying, and the other stands on the front end. Each sprays the whole tree from his angle of vision. I do this on both sides of the row, so as to spray each tree, as it were, from four corners. I spray every tree, too, with the same thoroughness, whether it seems to have apples on it or not, because for all I know the worm might live for a time on simply the leaves alone, and also for the reason that if there should be a few apples missed they would become at once breeding places for worms.

Then I spray with the wind. It helps to drive the spray clear through the tree to the apples on the other side whose calyx end happens to be pointing towards me. If we do not have as much morning breeze down the valley as afternoon breeze up the valley, I have known myself to get all hands and the cook up at three o'clock in the morning and be spraying by four, so as to take advantage of the morning breeze. At noon, in that case, our day's work is finished, which seems to suit the men all right.

But how are we to know when a tree has been sprayed enough? Try spraying a bunch of calyxes only lightly. Stop spraying and you will see that they do not all stand full of water; they are only sprinkled a little. Then try spraying the same bunch longer, and you will see that it takes some little time to fill them full of water. This, I believe, is essential, so that when the water dries down a sufficient coating of poison is left to insure protection to the apples. This is the main thing. There seems to be an understanding among fruit growers that when a tree begins to drip it is sprayed enough. I want to say emphatically that I do not believe it is possible to make a clean sweep of the codling moth worm if, when doing the first spraying, you quit spraying as soon as the tree begins to drip. That is not enough. A tree should be sprayed until there is not a dry twig or branch about it, and hardly a calyx on it that is not full of water. It should be literally soaked from top to bottom. This I believe to be perhaps the most essential one thing that can be done towards exterminating the codling moth.

Learn to watch the calyxes while spraying and see if they are full of water. See if every one of them are full of water on every branch and twig. When you have learned to do this you have learned how to spray thoroughly, and have also learned how to know when a tree has been sprayed enough. If every calyx is filled with spray, almost all the first brood of worms must die, and there will be very few left, indeed, to become moths again to lay eggs for the second brood.

Often a grower will tell me that he got his first spraying done all right because his worms did not begin to show up until late in the season. This is a sad mistake. If he had gotten his first spraying done well enough there would not have been so many moths to lay eggs for the second brood, hence, not so many worms coming on late. In fact, all the later sprayings are mainly necessary because some worms have escaped the first spraying. They are mainly a make-shift to patch up a bad job of first spraying. Nevertheless, the best we can do, we usually do fail to entirely exterminate the codling moth at one spraying, hence I believe that the other two sprayings are usually necessary.

Again, I have heard growers say that the worms that came so plentifully late in the season, usually went in the side of the apple, and for that reason they think their first spraying was done all right, but that they must have failed on the later spraying. Now, it may be true that they failed partially on their later spraying, but it is also probable that their first spraying was not done altogether as it should have been. For while it is true that the worm usually goes into the calyx end of the apple when it is small, but when it is larger—from an inch in diameter up—they go in any place—probably the first place on the apple they happen to get to. When the apples are very small we do not notice the worms in them because they always drop off, I think, by the time the worm has eaten into them much. But some worms have been in these little apples just the same, or there would not be many coming late.

Spraying in time is very essential for the first spraying, but I would much rather be a day or two late in finishing than to do it a little less thoroughly and get done on time. Also, it is well to use a good strength of poison. I use five pounds of arsenate of lead to 100 gallons of water. But I would prefer to use three or four pounds and put plenty on than to use five or six pounds and skimp in the amount of spray to the tree.

The second and third spraying should be done much like the first, only it is perhaps an advantage to use finer nozzles and high pressure. It is usually the aim in these later sprayings to cover everything with a fine mist, as perhaps more spray can be made to stick on the smooth surface of the apples in the mist form than if spraying longer so that water begins to run. High pressure and fine nozzles are undoubtedly a help toward attaining this result. Nevertheless, even in these sprayings I would apply the rule of thoroughness, and should much prefer that the spray should run a little on some of the apples than that some of them should not be sprayed at all.

But the main thing is the first spraying, to have it done on time and done thoroughly—that is three-fourths of the battle.

[The above article by A. L. Roberts is one of the best general and most thorough articles on Spraying for the Codling Moth that has ever come under our eyes to date. If the grower will read the articles which appeared in the April issue of "Better Fruit" in connection with this, he will have a thorough understanding of the codling moth, its life history, habits — information from the ablest experts and most successful men on every kind of spray now used.]

The fruit shipped in the Stokely Crate is just as nice as when shipped from the tree. Not a dent in it

INCREASED ORCHARD ACREAGE IN NORTHWEST

FROM many districts in Oregon come reports of increased acreage being set to fruit trees this spring. In Washington, the sale of trees was very large, and its acreage will be increased fully as much as that of Oregon. Reports from Idaho also show a big increase during the past year and indicate further development along that line this year.

At Medford, Oregon, 200,000 trees were sold to fruit growers during the past season, and a nursery firm recently purchased sixty acres there, which it will set to trees this spring. Grape culture is also engaging the attention of horticulturists at Medford, and twenty-five acres will be set to the Flame Tokay variety. It is believed that as fine grapes can be grown in Southern Oregon as are raised in California, and those who have tried it are said to have realized ten per cent on their investment.

Eugene, Oregon, growers are increasing their acreage, one grower near there having set out 2200 trees, and Prof. F. G. Young is planting a large orchard on land he recently purchased.

At Hood River, Oregon, a big addition has been made to the number of acres in trees, and although planting was commenced late, owing to the scarcity of trees, several hundred acres have been planted. Last year between 400 and 500 acres were set to trees there by one firm, and several hundred acres more by individuals.

Pendleton is awakening to the fact that a few orchards will help some, and W. S. Sargent recently set out a ten-acre orchard near there. G. A. Hobbs planted several hundred fruit trees, five acres of strawberries and a thousand grapes.

A five-acre orchard, belonging to Frank Groves, near Corvallis, Oregon, was so profitable that he added seven acres to it this spring. The new acreage was planted to Newtowns and Spitzenbergs.

The Grand Ronde Fruit Company, capitalized at $500,000 has bought 425 acres of land near La Grande, Oregon, which it will convert into a huge fruit farm. The land is located near the foot of Mount Imbler, and is said to be admirably adapted to the purpose of growing fruit.

Dayton, Oregon, has faith in the Loganberry, and W. S. Hibbard will add four acres to his patch of this prolific fruit this spring.

Jackson County, Oregon, is experiencing great activity in her fruit industry. From all parts of it come reports of planting, clearing and further increase in acreage. Apple and pear are the principal trees being set out, but a good many peach and cherry are also being planted. In the Applegate Valley, which is said to be free from late spring frosts, many peach trees are being planted. It is said that peaches are a more profitable crop in this section than apples. G. A. Hamilton of Oregon City recently purchased 118 acres at Grants Pass, sixty of which are under cultivation. He will plant fifteen acres to Spitzenbergs and Newtowns, with peach trees as fillers between the rows, and as soon as possible will set the entire acreage to trees. L. H. Yonker, another Grants Pass man, will increase the acreage of land which he recently purchased for an orchard, and is now engaged in setting trees. W. T. Perry and O. H. Perry will go into the grape business extensively in Applegate Valley. They are already planting twenty acres to vines and expect to increase the acreage until they have a vineyard of 160 acres. They have made a study of grape culture in California, and are convinced that it can be made profitable in Oregon.

Fifteen hundred acres were recently purchased by the Hanauer-Graves Company of Spokane, at a cost of $120,000 which they will cut up into five and ten-acre tracts for the purpose of fruit raising. The land is located at Meadow Lake, on the new electric line of the Washington Water Power Company, and is about ten miles from Spokane. The project includes the location of a townsite and irrigation plant.

James J. Cole, a Kennewick, Washington, wheat raiser, recently paid $10,000 for a ten-acre peach orchard there, and will take up fruit raising as his vocation in future. The land bought by Mr. Cole is said to have sold less than four years ago for $75 an acre. He expects to get profits of $500 an acre from his purchase this year.

At Wapato, Washington, one thousand acres will be planted to trees this spring. The land to be used was recently purchased by its owners from the Indians, and is said to be particularly adapted to fruit raising.

Prof. A. Van Holderbeke, ex-commissioner of horticulture of the state of Washington, in company with J. F. Littooy, of Snohomish County, will soon establish in the Wenatchee Valley, it is said, one of the largest nurseries in the United States. In regard to planting the nursery Mr. Van Holderbeke says: "The plan we now have laid out will be to get the nursery started immediately. For five years we will put out eighty acres each season. Each eighty acres will produce 500,000 trees. In planting a nursery the same ground can be used only once. To provide for this we have made a contract with the Wenatchee Canal Company by which they are to furnish eighty acres each season. All kinds of fruit trees will be set out. In fact, we have 200,000 trees now growing."

Idaho's story of development of its orchards is the same as that of Oregon and Washington—more acreage and a greater increase of its possibilities as a fruit country. One of the biggest improvements in this line will be made by A. E. Wood, near Payette, where he owns 360 acres of rich bottom land. Five acres will be planted this spring, and if it is found that the trees thrive well 125 acres will be set out next year. The varieties which Mr. Wood will plant are Spitzenbergs, Newtowns, Rome Beauty, Jonathan and Winesap. He will also set a number of cherry, peach and apricot trees and experiment with a large melon patch.

According to E. O. Snodgrass, a horticultural commissioner of Washington, Stevens County in that state will spend $15,000 this year in the purchase of fruit trees. It is estimated by him that 100,000 trees will be set out this spring and the acreage will be increased over 1000 acres.

"What does yo' want, Cap—quarter or half box?"

INSPECTORS SAY INFECTED TREES MUST GO

THE work of inspection, cleaning up and spraying orchards was never gone into so thoroughly in Oregon as it was this spring. From all parts of the state comes news of the good work being accomplished. It is evident that a campaign of better orchard conditions is being vigorously waged, with most satisfying results.

One of the most notable evidences of this fact is at Grants Pass, Oregon, which last year organized a fruit growers union. One of the first matters taken under consideration by this organization was to have a county fruit inspector appointed, and to have the laws regarding diseased orchards strictly enforced. During the winter and spring a general cleaning up has been going on, and this year growers expect to have a crop that will be 75 per cent free from disease or blemish instead of having a yield of 80,000 boxes, only 15 per cent of which were marketable, as was the case last year. Charles Meserve, who was appointed fruit inspector for Josephine County, has decided that stringent measures must be adopted, and has warned farmers and dealers against selling diseased fruits.

SENATOR PAULHAMUS
President of State of Washington Federation of Associations

The prompt action of Inspector G. R. Castner of Wasco County, Oregon, in confiscating and burning 500 trees that had been sent to Hood River to be sold by a local nurseryman prevented a probable spread of San Jose scale there, and evidenced the thorough work that can be accomplished by an efficient inspector.

Inspector French of Benton County, Oregon, reports that half of the trees in that county have been sprayed, and that the work of spraying the rest is progressing rapidly and satisfactorily. Mr. French has impressed on growers the importance of spraying, whether they find evidence of disease or not, and is conducting a campaign of education.

Geo. W. Riddle, fruit inspector for Douglas County, while in Roseburg recently ordered the destruction of several apple trees which were growing in the city's streets. The trees were infected with San Jose scale.

T. C. Mobley, fruit inspector for Gilliam County, has issued orders to growers to spray, and has also provided them with the formula for the Bordeaux mixture.

Inspector Evans of the Milton-Freewater district, has been busy making an inspection in his district and has issued instruction for growers in regard to spraying material.

H. M. Williamson, secretary of the State Horticultural Society, states that ten times the amount of spraying has been done in the Willamette Valley this winter than was ever done before, and that thousands of diseased trees have been destroyed and most of the remainder satisfactorily pruned and cleaned up.

In Multnomah County, Inspector Deich has been getting after owners of diseased trees and plants, and has insisted that they either spray or destroy them. He has issued notices to this effect, and says that the law in this regard will be rigidly enforced.

In answer to the plea of 500 orchard owners E. C. Roberts was recently re-appointed fruit inspector for Linn County by the county court. Mr. Roberts is said to have proved an efficient officer.

In Umatilla county the court recently decided a case in regard to two peddlers who had purchased infected fruit and were prohibited from selling it. When the peddlers discovered that they would not be allowed to dispose of the fruit, they brought suit for repayment of the money. The case was decided by the court ordering Ragsdale to refund the money.

A dispatch from Albany states that Linn County is on the warpath for fruit pests and diseased trees, and that about 200 acres of them have been cut down.

J. A. PERRY
Manager Rogue River Fruit Growers Union

Under the direction of Inspector E. C. Evans a thorough cleaning up is taking place, and trees are being sprayed and

Irrigon on the Columbia

THE GREATEST FRUIT BELT ON THE COAST

IRRIGON

On the O. R. & N., the Great Northern and on the Columbia River, has unrivalled shipping facilities.

IRRIGON

Is only from six to seven hours from Portland and Spokane and is from one to three weeks earlier than other northwestern irrigated districts.

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Has an abundance of pure water for irrigation and other purposes and perfect drainage.

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Has more than 30 miles canals and pipe systems.

IRRIGON
The Home of the
PEACH
Where five to ten acres will make you independent for life

Failure of Water and Crops Never Known. Prices $100 an acre and up. TERMS EASY. Now is the time to get in on the ground floor. Send us your name and we will tell you why.

Oregon Land and Water Co.

Department "B" IRRIGON, OREGON

pruned. In various parts of the county eight gas sprayers are at work, in addition to those owned by individuals.

At Salem many trees have been cut down, some of them in the city streets, and orchards in that vicinity are receiving a vigorous overhauling. The work is being done under the direction of Inspector E. C. Armstrong, who has had a difficult task, through the refusal of owners to spray. He has, however, the moral support of all progressive fruit growers, and being backed by the law, says that the orchards of Marion County must be saved from further inroads of fruit pests.

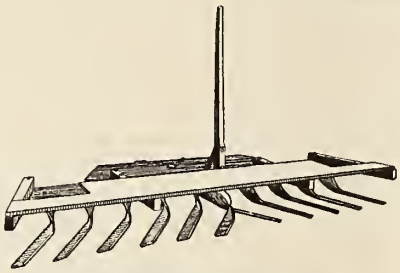
Fruit Inspector J. Beebe has notified orchardists in the vicinity of Eugene and places in his district that their trees must be sprayed, and is making an inspection to see that the provisions of the law in this respect are carried out. The inspector says he is agreeably surprised at the willingness of fruit growers to aid him in the work of cleaning up old orchards, and that many who have not been asked to do so have volunteered in eradicating scale and other tree diseases.

J. B. OLINGER
Manager Puyallup and Sumner Fruit Growers Association

Inspection and spraying is also the order of the day in Washington, as well as Oregon, and inspectors there are seeing that the work is done thoroughly. Inspector Whitney of Walla Walla has informed growers in his district that they must spray, and use something besides whitewash. This year he says whitewash will not go, and men running spraying outfits will have to put in the proper proportions of lime, sulphur and salt. He calls upon all growers to spray whether they have detected the presence of fruit pests or not.

L. D. Lape, in an open letter to fruit growers in Benton County, Washington, does not mince words in calling their attention to the necessity of spraying. After calling their attention to the big profits to be made in fruit growing if properly conducted, he says: "I want you all to wake up and go after your orchards and care for them in the best possible manner. The horticultural law says that if you don't care for your orchard the fruit inspector must do it for you, and it also says that if you don't raise good fruit you cannot sell it, and I shall certainly enforce the law."

J. B. Holt, Whitman County's fruit inspector, says: "We expect every man with an orchard to spray it regularly this year, for the law will be rigidly enforced and those who do not will be prosecuted. An orchard properly sprayed will produce from 85 to 100 per cent more good fruit than one that is not sprayed."



The Kimball Weeder and Cultivator—a Fine Dust Mulcher

At Spokane a movement was recently put on foot to have a city tree inspector appointed in order that all tree pests can be eradicated.

Asotin County, Washington, is estimated to have used $15,000 worth of spraying material this spring. Orchardists there are said to have done the work more thoroughly than ever before.

Geo. Farwell was recently appointed fruit inspector for Chelan County at a salary of $1500 per year. Deputy inspectors were also appointed and will receive $4 per day. This is the district in which Wenatchee is situated, and the work of the inspector there is said to take all his time.

At Prosser, Washington, the plan of destroying all non-bearing trees has been discussed, owing to the fact that it is claimed that they propagate fruit pests. No action has been taken as yet, but it is thought that willows, which are known to be especially detrimental to fruit trees, will be removed where they are adjacent to fruit farms.

WHOLESALE RETAIL

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R. H. WEBER, *Proprietor*

THE DALLES, OREGON

Grower and Dealer in FRUIT, SHADE AND ORNAMENTAL

TREES

GRAPE VINES & SMALL FRUITS
EVERGREENS, ROSES & SHRUBBERY

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CHOICE GARDEN, FRUIT AND ALFALFA LANDS

WHEAT LANDS

From $15 to $75 Per Acre

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Walla Walla, Washington

Photographed from an orchard that nets the owner $400 per acre each year

LOCATED IN THE FAMOUS

Yakima Valley, Wash.

Gilt edge fruit land $100 to $250 per acre in any size tract and on easy terms

"THE PROOF OF THE PUDDING IS IN THE EATING"

So come and look over our beautiful country. *Write us for a booklet.*

BRADSHAW - HOFFMAN REAL ESTATE COMPANY
NORTH YAKIMA, WASH.

ELBERTA

Peach Trees two cents each

Fine, thrifty, June budded stock, 2 to 3 feet high and guaranteed absolutely free from disease. $20 per 1000, $2.50 per 100, *if you act quickly.* We make this extraordinary offer to "show" growers that our East Tennessee Red-Land Fruit Trees are the best on earth. Now is the time to plant. Write today for full particulars. Illustrated catalog free.

Chattanooga Nurseries

Ridge Avenue, Chattanooga, Tenn.

Ship Your FRESH EGGS AND GOOD DAIRY BUTTER to us and get your Cash by return mail

MILLER BROS. 1538 Commerce St. TACOMA, WASH.

FUNGICIDES FOR PREVENTING FRUIT DISEASES

BY M. B. WAITE—CONTINUED FROM PAGE TWENTY-TWO, APRIL ISSUE

Strawberry Disease

Leaf-blight (Sphaerella Fragariae)—Spray with standard Bordeaux mixture every two weeks during the season, beginning after the crop is harvested. Four to six applications are required.

Raspberry Disease

Anthracnose (Gloeosporium Venetum)—Cut out and burn the badly diseased canes and spray thoroughly with Bordeaux mixture before the leaf buds open. Spray the young canes soon after they appear above ground. Repeat the application ten days or two weeks later, and again just before blooming.

Peaches Grown by C. H. Stewart, Albany, Oregon

Blackberry Disease

Anthracnose (Gloeosporium Venetum)—The treatment is the same as for raspberry anthracnose.

Cranberry Diseases

Blast and Scald (Guignardia Vaccinii)—Spray thoroughly with standard Bordeaux mixture to which 4 pounds of resin-fishoil soap has been added; first, early in June before any of the flowers have opened; second, immediately after the maximum flowering period; third, fourth, and fifth applications at intervals of two weeks. The oil is the most important application in combating the blast. Dead vines and rakings should be burned.

Rot (Acanthorhynchus Vaccinii)—Follow the same treatment as for cranberry scald.

Anthracnose (Glomerella Vaccinii)—Follow the same treatment as for cranberry scald.

Currant Diseases

Leaf-spots (Septoria Ribis and Cercospora Angulata)—Spray with Bordeaux mixture about five times at intervals of two weeks, beginning while the buds are swelling.

Powdery Mildew (Sphaerotheca Morsuvae)—Treat the same as recommended under the same disease on the gooseberry.

Anthracnose (Gloeosporium Ribis)—The treatment is about the same as that given above for leaf-spots.

Gooseberry Diseases

Powdery Mildew (Sphaerotheca Morsuvae)—Spray with potassium sulphid at the rate of 1 ounce to 2 gallons of water. Apply every two weeks during the season, beginning just as the buds are swelling.

Leaf-spots (Septoria Ribis and Cercospora Angulata)—Follow the treatment outlined under the same disease of currant.

TYPES OF SPRAY OUTFITS

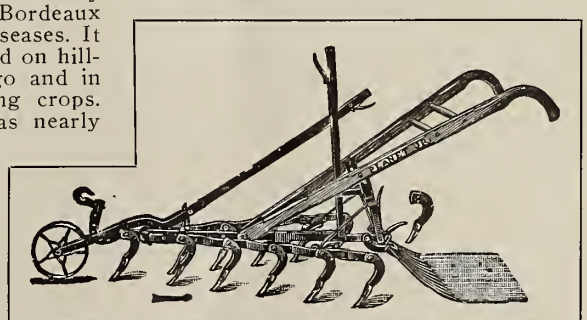
Sprayers For Small Operations

Bucket Pumps—It is possible to apply small quantities of spray on a few plants, in a small garden, for instance, with a garden syringe. Most of these syringes, however, do not give a sufficiently fine spray to be satisfactory. The old-style syringe was intended to throw too much water to fulfill the requirements of a modern sprayer. It is even possible to test the effect of Bordeaux mixture by switching it on with a small whisk broom or brush. Such expedients, however, are now supplanted by the bucket pump, which meets the requirements of the garden and other small operations. Several different forms are on the market, made by different manufacturers, and some of them are very efficient. In a few cases these pumps are supplied already mounted in a galvanized-iron bucket, but usually the pump is inserted into a wooden bucket containing the spray. To do good work the bucket pump usually requires two operators, notwithstanding the familiar advertisements in agricultural papers showing a single operator. With the bucket pump good pressure can be secured, and if suitable hose and nozzles are used results entirely satisfactory are possible.

The Knapsack Pump—This form of spray outfit consists of a copper tank which may be strapped to the operator's back like a knapsack. This contains a small pump which may be operated with one hand while the nozzle is held in the other. This style of outfit was used widely in the first experiments with Bordeaux mixture, especially with vine diseases. It is still used in vineyards situated on hillsides where a horse can not go and in thickly planted or low growing crops. The barrel pump, however, has nearly driven out the knapsack outfit in commercial operations. In spraying several acres of cantaloupes once the writer was surprised to find that a man with the knapsack outfit could do the work at exactly the same price as an outfit consisting of a barrel pump mounted on a sled drawn by one horse and operated by three men, one to do the pumping and drive the horse and two to carry the nozzles. The latter outfit, however, got over the ground so much more rapidly and saved so much time that it was mainly used. The objections to the knapsack pumps, however, are numerous. It is hard to get the required pressure in the pump on account of its small size and instability. It is rather heavy to carry on the back and is very liable to leak and the operator who can handle one all day without getting his back wet and some of the liquid down his neck is fortunate. As a rule, the low pressure obtained by the knapsack pump results in an inferior job of spraying, though with a strictly first-class Vermorel nozzle this is not necessarily so.

The Barrel Pump—No type of spraying outfit is more widely used or has given better satisfaction in small or medium-sized commercial plantations than the barrel pump. A great many different forms are now supplied by the makers of spray pumps, and a number of them are efficient and successful. They are mounted in a great variety of ways. An ordinary 50-gallon whisky or kerosene barrel forms an excellent though inexpensive tank for holding the spray. The pump, according to its design, can be inserted in the end or the side of the barrel. The barrel may then be mounted to suit the operator on a sled or on two wheels, or it may be placed in a cart or wagon. A small sled can be made in a few minutes by spiking some plank across a couple of pieces 2 by 4 inches, or, better, 3 by 4 inches, with the ends rounded to serve as runners. Such an outfit can be drawn through narrow rows of potatoes, vegetables, or other crops, where a wagon could not go. The ordinary two-wheeled cart makes a very convenient rig to use with the barrel sprayer. One man can easily drive the cart and do the pumping, while one or two additional hands can apply the spray from the ground.

The Tank Outfit—Various forms of tanks can be mounted on a two-horse wagon and thus enable a larger quantity of spray to be carried into the field. These tanks are sometimes square or rectangular. Some orchardists prefer to mount a large hogshead, either end up or on its side, and to pump the spray from that. As a rule, however, the best style is either a rectangular tank or a half-round tank, flat on top. With the rectangular or half-round tank an ordinary barrel pump can be used, but it is much better to use one of the larger tank pumps especially made for the purpose. These can be mounted either on top of the tank or on a platform at either end. The regular tank pump has a suction tube of whatever length is desired, which draws the spraying mixture from the tank. One of the great advantages of the tank-pump outfit is the convenience of arranging an elevated platform. Where tall trees are to be sprayed it is almost impossible to reach to the tops from the ground with extension rods of reasonable length. A scaffolding or tower of



There are no better cultivators or garden tools made than Planet Junior. Portland Seed Company, Agents

the height desired can be built on top of the wagon and the operator can thus be elevated 10 or 12 feet from the ground.

Geared Sprayers

In the above-described outfits the pressure on the pump is secured by man power. Ingenious fruit growers, as well as manufacturers, have devised several contrivances by which power is obtained by means of a sprocket wheel from the wheel of the wagon. There are a number of different devices, several of which are more or less successful. As a rule these geared devices are better adapted to low-growing crops, like potatoes and strawberries, and possibly also to vineyards, than they are to large orchard operations, although they have been used a good deal in orchards. In spraying fruit trees the operator frequently stops long enough to thoroughly coat each tree before proceeding. Usually this can not be

Stokely's Cylindrical Fruit and Egg Crate

done with the geared sprayers, although some have provision for storing up the pressure.

The highest type of spraying outfit consists of a steam, gasoline, or kerosene pump mounted on a wagon and drawing the liquid from a tank of from 100 to 300 gallons. Several growers use very successfully a small 2 or 3 horsepower steam boiler and a bronze steam pump. This is carried on a platform on the wagon. The only objection to such an outfit is its weight, but, on the other hand, those who have used steam sprayers seem to have less fault to find than the users of the gasoline sprayers.

Recently the writer has used a very successful kerosene outfit very similar to the one described above. With a gasoline or steam outfit it usually pays to have four leads of hose and four men spraying at a time.

The most important part of the whole apparatus is the nozzle. Unfortunately this feature has been much neglected by pump manufacturers, and many inferior nozzles have been sent out to farmers. There is a tendency to improvement in this direction, however. The actual results in the application of the spray mainly depend upon the efficiency of the nozzle. In general the best nozzle is the Vermorel, or a nozzle of that type. This consists of the "cyclone" nozzle, as invented by Barnard, in which the spray enters a cylindrical eddy chamber through a tangential opening at the side. It circles violently in the eddy chamber, and leaves the nozzle through a perforated cap and, still whirling, flies into a minute mist-like spray of the desired thinness. Vermorel added the plunger or degorger, which enables the operator to thrust the needle-shaped pin through the small opening to prevent clogging.

With a good Vermorel nozzle, properly drilled on the inside, and having the correct style of eddy chamber, with a pressure of 40 pounds to the square inch, a fine and satisfactory spray will be produced. Such nozzles are very rarely found on the market in recent years. Most of the nozzles require a pressure of 75 to 100 pounds to give a good spray. With this higher pressure almost any nozzle of this type gives good results. A good Vermorel nozzle is really an exact piece of work. The eddy chamber should be carefully drilled, and smooth on the inside, and the tangential inlet should also be correctly drilled and not simply cast in the brass. The cap itself is perhaps the most important. It should have its bearings on the outside, so as to avoid any interfering washers, and the vent should be exactly in the center, and true and smooth. The cap should be made of hard brass, and the size of the opening should vary from one-sixteenth to one twenty-fourth of an inch, according to the pressure to be used. The greater pressure the larger the opening and the greater the quantity of spray that can be thrown.

How to Obtain Success in Spraying

Success in spraying is to be secured only by careful attention to details in two principal directions: (1) Sprayings must be timely, and the proper time varies with the particular conditions. The operator should know what disease or diseases he is expecting to prevent by the application of the spray, and should thoroughly post himself beforehand as to the correct times and intervals for spraying for that particular disease. The spray must be applied ahead of the infection periods of the fungi. (2) The spraying should be thoroughly done. In dormant spraying a coarser spray can be used than in summer spraying, because the object is merely to form a complete coating of the spray over the wood. In summer spraying, however, an exceedingly fine, mist-like spray reaching every portion of the plant and covering with minute dots, preferably no larger than a flyspeck, every square inch of the fruit and foliage is necessary. It is not necessary that the minute specks of the spray should entirely coalesce into a coating, although where a second or third treatment is made this often results. But there should be no spaces the size of one's thumb nail not thoroughly peppered with the spray.

IDENTIFICATION OF PLANT DISEASES

When the farmer or fruit grower is in doubt regarding the character or name of any plant disease with which he has to contend it is best to write to the agricultural experiment station of his State or to the United States Department of Agriculture, sending specimens for examination, as directed. In most cases printed matter containing full accounts of the disease and its treatment can be furnished without cost.

Okanogan
NURSERIES
Hardy, Northern Grown Trees
Okanogan, Washington
[Okanogan County]

Puyallup Valley
Washington
Berries and Fruit
Write for Booklet
John Mills & Son
Puyallup, Wash.

Established 1863 by J. H. Settlemier
420 Acres Devoted to Nursery Purposes
THE WOODBURN
NURSERIES
Fruit Trees, Shade Trees,
Small Fruits, Ornamental Plants,
Evergreens, Roses, Etc.
The Woodburn Nurseries have been in existence forty-four years with only one change of ownership. Tree growing is our profession and our stock is not the result of experiments, but knowledge.
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Agents Wanted WOODBURN, OREGON

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Albany, Linn County, Oregon
The soil of the Willamette Valley is better adapted for Clover than any other place in the United States—yield from 5 to 10 bushels of seed per acre
Clover, Fruit, Dairy, Garden and Grain Lands for Sale. Write us for information
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500,000 Plants
CLARK SEEDLING
STRAWBERRY
"The kind that made Hood River Famous"
$2.50 per 1000 Satisfaction Guaranteed
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MILTON, OREGON

RECORD CARDS FOR STRAWBERRY PICKERS

KEEPING account with berry pickers and packers or the counting up of a lot of tickets representing the different number of boxes picked or packed, will be a thing of the past after using just once the record card system. The name of the grower heads the card. This is necessary, as usually there is more than one grower in the same locality, and as some of the pickers work for more than one grower in the same season, the name will prevent mistakes.

The next line shows that it is the pickers' record card. When filling out name of picker also fill out date when card is issued. It is advisable to have record cards read "Non-transferable." It prevents pickers from having them cashed by their fellow pickers, merchants or saloon keepers, and by doing so may leave before the season is over, compelling the grower to hunt for new pickers; or the grower may have advanced provisions or money to the picker supposing that he has all his money coming. No card should be paid until signed by the owner. That will prevent cashing in of lost tickets. The figures on card stand for the number of boxes picked. As hand carriers hold six boxes, those figures will be used the most. When the 6s are gone use up the 4s, 2s and 1s until card is used up. The holes are punched in the different spaces with a common punch like conductors use. They can be bought in almost any hardware or stationery store.

Each card contains tallies for 250 boxes which at 1½c per box make each card worth $3.75. It is, of course, optional with the grower whether he put on the price or not. It is advisable to do so if the growers in the same locality can agree on the same price, as it will prevent pickers drifting from one place to another claiming that they can get more per box elsewhere. The cards are perforated through the center so they can be doubled up and punched double at the same time. When the card is full the duplicate is torn off and kept by the grower. By doing so he knows just how many tickets are out to be cashed in at the end of the season.

The packers' tally card is used the same way except that the figure 1 in the tally column stands for one crate of berries and the figures 3, 6 and 2 for boxes. The price per box for packing can be changed to suit. The amount due on the packers' card, crates of 24 boxes each, ½c per box, amounts to $4.15.

In order to distinguish readily between the pickers' and packers' cards, have them printed on different colored cardboard.

The above given system is not copyrighted. It is used in some of the berry-growing districts and found practical, and "Better Fruit" takes pleasure in publishing it for the benefit of its readers. Your local job printer can print them for you on a light-weight cardboard

República de Cuba NO ES VALIDO POR MAS DE CIEN PESOS
NOT GOOD FOR MORE THAN ONE HUNDRED DOLLARS
GIRO POSTAL
NUEVA GERONA.-Prov. Habana No. 3775
Páguese á la orden de
Pay to the order of
Better Fruit Pub. Co
Fecha
Date
190
La persona mencionada en mi aviso de este número y fecha.
The payee named in my advice of same number and date
Sello de la Oficina Expedidora
Uno Dollars uno Cents.
La cantidad designada en mi aviso.—The sum specified in my advice.
Al Administrador de Correos de
To the Postmaster at
Hood River
Oregon
Importe.—Amount.
$ 1.00/100
Carmen Pagés
Administrador de Correos.—Postmaster,
Stamp of Paying Office
Sello de la Oficina Pagadora
RECIBIDO EL PAGO.—Received Payment.
Véanse instrucciones al dorso y forma de endoso
See instructions on back and form for indorsement

A Better Fruit Subscription from Cuba

(Original)
E. H. SHEPARD
Berry Pickers' Tally

Date, ... 190....
Name, ...
Not Transferable
Not Payable Until Signed

1	2	4	6	6	6

Amount Due on this Card
..... Boxes at 1½c, $.....
Signature, ...

(Duplicate)
E. H. SHEPARD
Berry Pickers' Tally

Date, ... 190....
Name, ...
Not Transferable
Not Payable Until Signed

6	6	6	4	2	1

Amount Due on this Card
..... Boxes at 1½c, $.....
Signature, ...

(Original)
R. H. WALLACE
Berry Packers' Tally

Date, ... 190....
Name, ...
Not Transferable
Not Payable Until Signed

1	1	1	2	6	3

Amount Due on this Card
..... Boxes at ½c, $.....
Signature, ...

(Duplicate)
R. H. WALLACE
Berry Packers' Tally

Date, ... 190....
Name, ...
Not Transferable
Not Payable Until Signed

3	6	2	1	1	1

Amount Due on this Card
..... Boxes at ½c, $.....
Signature, ...

ARE ARRIVING BY THOUSANDS

L. A. CODDINGTON, FOR THE OREGON DEVELOPMENT LEAGUE

THE campaign of advertising which has been conducted during the past ninety days by the commercial bodies of Oregon composing the Oregon Development League, is bearing fruit. Much credit for the success of this campaign is due to the press throughout the State, which has rendered valuable assistance in exploiting the colonist rates which became effective March 1st.

The rates are the lowest ever made by the transcontinental railroads, and homeseekers, quick to take advantage of them, are pouring into Oregon in constantly increasing numbers. While many of these have come through to Portland, larger numbers have scattered to various parts of the state. It is now the duty of our citizens to make these strangers within our gates feel entirely at home.

It has been said that "Persistent Publicity Pays." Grants Pass, Eugene, Medford and Ashland have become firm believers in this doctrine; only last week the commercial clubs of those cities, assisted by Tom Richardson, manager of the Portland Commercial Club, inaugurated vigorous publicity campaigns and raised good sums of money for advertising purposes.

If other communities, not already active, will but follow the examples being set for them from week to week, and advertise to all the world what they have to offer to homeseekers and investors, the population of the Beaver State will surely double within a very few years.

Walnut Land

For the finest in the World

Soil & Climate unsurpassed. Address

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The Red Apple Real Estate Co.

Farmers Phone 1212

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WENATCHEE, WASHINGTON

LAND

OF BIG, RED APPLES

WE ALWAYS HAVE SOME

CHOICE TRACTS TO OFFER

At popular prices and sell them strictly on their merits. Years of study given to Hood River and its products. Can sell you intelligently. Call on or address

Geo. D. Culbertson & Co.

Leading Land Agents Hood River, Oregon

AGENTS WANTED

Can you sell goods? If so we need you. Complete outfit free; cash weekly. *Write for choice of territory*

CAPITAL CITY NURSERY COMPANY

SALEM, OREGON

TOBACCO DUST FOR WOOLLY APHIS

Spring and Summer is the time to fight woolly aphis, and Tobacco Dust is the preparation to use in fighting it. Tobacco Dust is safe and effective, and is a valuable fertilizer for the trees as well. It is recommended by the Missouri Experiment Station and other authorities.

WE SELL TOBACCO DUST IN ANY QUANTITY

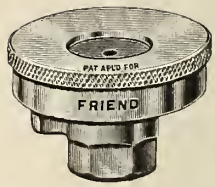
Send for circular quoting prices. Do this now, so the Tobacco Dust can be applied to your trees, and the rains will leach it down among the roots, killing the woolly aphis and fertilizing the trees for this season's growth.

MAYER FERTILIZER AND J. CO.

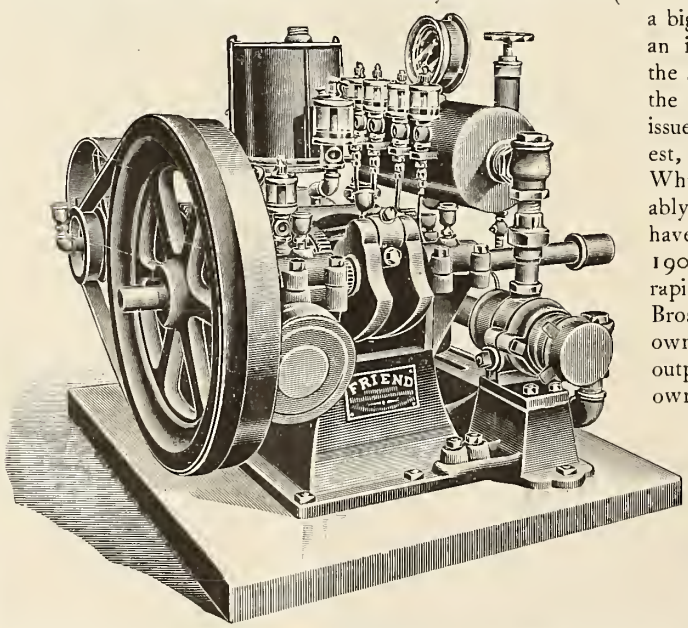
5520 BULWER AVENUE ST. LOUIS, MISSOURI

Manufacturers of Celebrated Anchor Brand Fertilizer

A REAL "FRIEND"



The spraying outfits made by us are real true "Friends", because they are made by real "Friends." Our most effective advertising is done in the good old Quaker way, i. e., satisfied customers. Our ideas are hatched out of anti-boozed brains and worked out by anti-boozers. (No wonder they are imitated.) We do not buy a big, heavy, awkward stationary engine made west and tinker it to an irrigating pump made east and then have the nerve to picture it as the smallest, lightest, simplest and most satisfactory power sprayer on the market. The cut pictured here and the scene elsewhere in this issue gives you some idea of what we believe to be the smallest, lightest, most compact, most satisfactory power sprayer in the world. While it may in the picture appear complicated, yet it is not objectionably so when you consider that our history is, so far in 1907 we have sold 101, 1906-61, 1905-22, 1904-14, 1903-6, 1902-3, 1901-1, and every line of our business has increased even at a more rapid rate. Mind you all this the work of the boys known as Hull Bros., who started in business without a red cent and have held their own ever since; all they have had to back them is the quality of their output. It may seem to you that we are pretty loudly tooting our own horn, but "Friends" we defy the world to produce anything equal to our machines. Our ideas are all protected, if you see them in use by others you may know they have been stolen. Since our nozzle ad. in the April "Better Fruit" we have had a large sale on them in your state and we believe that when the people of Oregon once get awake to the fact that there is something better in spraying machines than a big, heavy, expensive, small capacity gas bag or a tinkered up mess of weaving, springing wheels, gears and pitmans that take the whole wagon and leave only room for a small amount of spray mixture, they will get together and do as others have done and are doing—Get in touch with the "Friend." No matter what outfit you use, you cannot afford to bother away your time with cheap, awkward, leaky, annoying shut-offs and catching, dripping, clogging, clustered nozzles when you can get the thing you really need and want, and get it quick. The "Friend" Ball Shut-off, $2.20 and the "Friend" Nozzles $1.55 postpaid.



WARNING—We, the "FRIEND" MANUFACTURING COMPANY, hereby WARN all persons that we will vigorously prosecute any and all infringements on our "FRIEND" NOZZLE and SHUT OFF. All necessary legal steps have been taken to give us proper protection, and we are fully prepared to defend our rights.

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AMONG THE VARIOUS FRUIT CANNERIES OF THE PACIFIC NORTHWEST—NEW PLANTS

FROM present indications the coming year will see the establishment of many canneries in the States of Washington, Oregon and Idaho. Reports from the various fruit growing districts in these states show a marked activity in this direction, and many thousands of dollars will be spent in the canning industry.

At Freewater, Oregon, a company has been incorporated under the name of the Freewater Preserving & Canning Company, with a capital of $15,000. Its incorporators are James Evans, D. J. Kirk and William Swash, and it will do a general canning and preserving business.

Kelso, Washington, is planning for a cannery which it is thought may be established by the fruit growers association there. If the growers do not take the matter up it is said it will be started as a private enterprise.

Kalama, Washington, is considering the establishment of a cannery which will have a capacity of 10,000 crates each of raspberries and blackberries.

Work on the new cannery at Nooksack, Washington, is being pushed rapidly, and canned fruit and vegetables from it will be placed on the market some time during the coming fall.

The Wenatchee Canning Company at Wenatchee, Washington, which has one of the finest plants in the Northwest, made an improvement this spring by installing a sixty-horse power electric motor in place of steam, which it had formerly been using. It is claimed by the officers of the company that the motor will be much more economical.

At Sedro-Woolley, Washington, $10,000 in capital stock has been subscribed to establish a cannery, and 1000 acres of fruit and vegetables have been pledged by farmers to support it.

At Orcas Island, near Bellingham, Washington, a cannery will be built during the summer, either at East Sound or West Sound, to handle its surplus fruit.

The Combined Tomato & Fruit Canning Company is the name of a company recently organized at Walla Walla, Washington, for the purpose of establishing a cannery there. The O. R. & N. Co. has offered the company a site on its right of way, and it is expected that work on its erection will soon commence. It will have a capacity of 25,000 three-pound cans a day, and is expected to be in operation by July 1.

The site for a new cannery has been selected at Fruitland, Idaho, which will be built to handle its surplus fruits.

Grants Pass is alive to the fact that a canning establishment will add to the prosperity of the fruit growers at that place, and a movement is on foot to establish one there. The work of securing a plant of this kind is in the hands of its Commercial Club and Fruit Growers Association, and if the necessary arrangements can be made, work will be commenced on it in time to have it completed to handle this year's crops. As the Rogue River Valley is one of the largest and best peach-growing districts on the Coast, and canned peaches are the best selling product among canned goods, it is thought that the establishment will prove a money maker from the start.

The proposition to build a cannery at Albany, Oregon, met with such favor that a bonus of $1500 was raised to secure it, and a contract has been let for its erection. The stock in the new concern was taken by G. W. Holcomb, of the Oregon Packing Company which has an immense establishment of this kind in Portland, and W. Allen, a Eugene man, who secured the contract to build it. The Oregon Packing Company is interested in the cannery at Salem, owning one-third of its stock. The California Fruit Company Association, which is the largest fruit packing concern in the United States, will also be interested in the enterprise, through the Oregon Packing Company, the stock of which it controls.

The New Westminster (B. C.) Fruit Packing Company had a most successful season last year and is considering a plan to enlarge its plant. During the busy season it put up six tons of fruit per day, and has found it necessary to provide extra storage room for the products which it expects to handle this season. It has also installed a new prune dryer at an expense of $1000, which will save the labor of six men. The feature of the dryer is that it cures the fruit by steam.

A plant for the manufacture of vinegar, wine, fruit jams and jellies at Blalock Farm three miles from Walla Walla, Washington, is doing such a thriving business that it is kept busy night and day. It has a capacity of 200,000 gallons annually, and it is proposed this year to extend the variety of its products. The owners of the establishment are John A. Finch and A. B. Campbell, and it is managed by W. F. Ripley.

Efforts of the Commercial Club at Granger, Washington, to establish a cannery there are said to be meeting with success. The business men of the town are backing the venture, aided by the fruit growers, and considerable stock has been subscribed. It is expected that all the stock that is necessary will be disposed of within a few days, when plans for its equipment will be considered.

The prune packing plant at Albany has been purchased by Lasselle Brothers, who will make some improvements and add to its capacity. The price paid was $10,000.

In Clackamas County, Oregon, the project of starting a cannery is being agitated, and it is said that if it can be established plenty of products can be found to make it a success.

The output of the cannery at Puyallup, Washington, last year is valued at $100,000, and during the busy season it employed fifty hands. It expects to increase its business this year, as its wares are said to be gaining a national reputation, which will demand a larger output.

So popular was the idea of having a cannery located at Lynden, Washington, that a meeting held there to consider the movement developed into a scramble to take stock in it, over one hundred shares being sold in a few minutes. The success in promoting the cannery project is said to be due to a new fruit growers association which was recently formed at Lynden.

Canning plants will also be established at Everson, Sumas and Ferndale, Washington, which, it is said, will give Whatcom County, in which they are situated, more establishments of this kind than any section in the Pacific Northwest.

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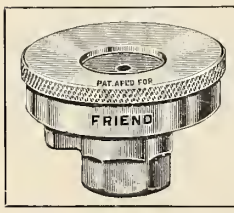
THE care and comfort of the live stock of the farm is considered one of the most important features of the daily duties of the owner, and all that can be done that will make the stock a paying investment should never be overlooked. Each head represents so much capital which should be made to pay proper interest the same as the city merchant expects goods on his shelves to pay him a margin of profit. If this is a fundamental principle upon which to base success, then it should behoove the stockman whether he possess one head or a hundred to protect himself against such loss as might occur in the many ways that are constantly being brought to his attention through the daily and weekly press, losses that in many cases he is little able to afford and often working a hardship which impairs his ability to continue to conduct his affairs at a profit. These remarks are made as an introduction to a new enterprise now being established in this State for the insurance of all kinds of stock against loss, whether natural or accidental. We insure our houses, barns and contents against fire and lightning, our lives against accident or death, and why should we not take advantage of the same protection for our horses, mules, cattle, goats and sheep. They represent our capital in the business of farming, and no merchant would think for a moment of doing without insurance for the goods upon his shelves which represent his capital, and why should the farmer?



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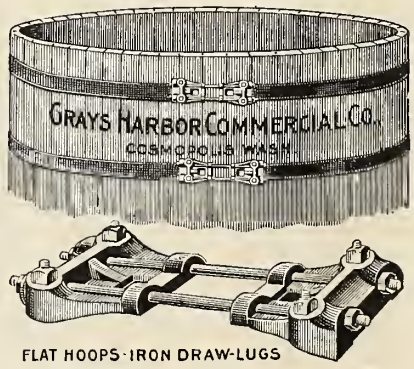

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DOINGS OF THE NORTHWEST HORTICULTURAL SOCIETIES AND FRUIT GROWERS' ASSOCIATIONS

CONSIDERABLE activity has been displayed among the horticultural societies this spring, and topics of lively interest have been discussed. At Hood River the matter of irrigating or not irrigating apple trees disclosed the fact that both sides of this important question have staunch adherents, with a preponderance of argument in favor of judicious irrigation. It was admitted by the irrigationists that young trees did not possibly need water, but that when trees reached the age of fifteen or eighteen years it was indispensable, particularly in extraordinarily dry seasons. Mr. A. I. Mason, who is a thorough orchardist and last year grew fruit that took the sweepstake prize at the Hood River fruit fair, does not believe that irrigation is necessary to the growing of the best fruit, and thinks that nature provides all the water needed for them to mature properly. Mr. J. Porter, one of the owners of the Sears & Porter orchard, considered to be the most successful commercial orchard at present in Hood River Valley, is of the opinion that, judiciously used, water is an absolute necessity to trees in full-bearing maturity. In the discussion that followed, participated in by some of the most prominent growers in the valley, the impression prevailed that water, while not absolutely essential, was beneficial.

A fruit growers meeting held at Eugene, Oregon, came to the conclusion that old methods must be discarded, and that in planting an orchard for commercial purposes two or three of the best varieties should be selected. A decision arrived at as to the most desirable varieties was in favor of the Spitzenbergs, Newtown Pippin, Wagner, Baldwin and King.

A meeting of growers, which was held at Newberg, Oregon, discussed the best and quickest method of eradicating scale. County Fruit Inspector Goodrich, of Yamhill County, addressed the meeting on this subject, saying he thought it could be checked, if proper methods were used. W. S. Allen of Dundee was also one of the speakers, and H. M. Williamson, secretary of the Oregon State Board of Horticulture, made a short talk that was interesting.

A good deal of interest is being manifested in the Rogue River Fruit Growers Association. Meetings are being held once a month and practical demonstrations of pruning, grafting, spraying, budding and other branches of horticulture given.

At a meeting of the Polk County Horticultural Society, W. K. Newell, president of the State Horticultural Commission, was present and delivered an address on pruning. Mr. Newell believes in summer pruning, and during his remarks said: "I prefer, generally, summer pruning as winter pruning excites the tree to too rampant a growth in an average soil. Young trees pruned in winter will not mature for the following winter, and are more liable to injury from frost."

E. L. Stewart, president of the Washington State Horticultural Society, has issued a letter impressing on all fruit growers the benefits to be derived by becoming a member of the society. Since its last annual convention at Everett in January, the society has increased its membership from 157 to 360. President Stewart hopes to swell the number to 1000. He has received over 300 letters from various parts of the United States asking for copies of his address on his seven-acre orchard, which he delivered at the Everett convention.

Fruit growers in Idaho are said to be indifferent as to where the next meeting of the state association will be held. It was proposed to hold it at Payette, but that place does not seem to be anxious to secure it and in case it is not held there, it is probable that Caldwell or Twin Falls will be selected.

A recent meeting of the Montana State Board of Horticulture at Helena, was attended by the governor of the state, who was warmly congratulated on having secured an increase in the apportionment for horticultural work. Montana is after fruit pests as well as other sections of the Northwest, and in Secretary Whiteside's report he says: "In orchard work the results have been quite satisfactory. In the Kalispell district the codling moth has been almost entirely exterminated; and in the Missoula district has been greatly reduced. In this work the power spraying machines purchased by the board last year were of great assistance."

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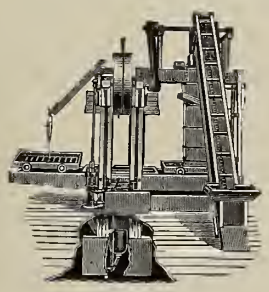

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NOTES ON BUSINESS END OF FRUIT GROWING

PAYETTE Valley Apple Growers Association was organized last fall under very favorable conditions. Mr. C. C. Eiffe, the secretary, is well known to the fruit world.

THURSTON County Fruit Growers Association is located at Tumwater, Washington, and was managed last year by Fred W. Lewis. No report has reached us of last season's work.

SHELTON Fruit Growers Association, Shelton, Washington, has been organized some time, but we have had no report with much information, but believe it is doing well and is successful.

WHATCOM County Fruit Growers Association from reports has been up and doing. Everything around Bellingham is prosperous. J. H. Kirkpatrick is president. We want more information.

BITTER Root Valley, of Montana, has recently organized an association of fruit growers, and the orchardists are aiming in this way to improve the quality of their fruit, pack it better, and get better net results.

MASON County Fruit & Produce Union of Shelton, Washington, makes no report further than W. E. Kirkpatrick was president and S. Schumaker secretary. We hope they are doing well, as they are on the right track.

VASHON Island Fruit Growers Association of Vashon, Washington, deals largely in strawberries. It has a fine market, being near Seattle, consequently they do not have to make any long distance shipments. We understand it has been successful, and as we have heard of no change, presume C. J. Prior will continue as secretary this year.

KENNEWICK Fruit Growers Association of Kennewick, Washington, is comparatively a new association. Kennewick is one of the new fruit districts, but a very prosperous and thrifty one. The orchards are young and few in bearing, but as strawberries bear the first year, the association's output was principally this fruit. Kennewick is early, and the association reports very fancy prices. W. S. Jenkins is manager.

SPOKANE Fruit & Vegetable Growers Association of Spokane, Washington, are endeavoring to improve their condition by concentrating all the surrounding districts under one management for the purpose of avoiding local self-competition. It is a splendid idea, and can be done if the proper consideration and service is given each section, with a good manager at the head of it. The plan has worked in Tennessee and Missouri.

J. B. OLINGER, recently manager of the Wenatchee Valley Fruit Growers Association, resigned to accept the position of manager of the Puyallup Valley Fruit Growers Association of Puyallup, Washington, succeeding W. H. Paulhamus, who had resigned on account of other affairs consuming his whole time. Mr. Olinger is well and favorably known. We know him, and believe he will make an able manager and be popular with the growers.

UNION Berry Shippers of Puyallup and Sumner, Washington, recently organized, held a meeting and elected S. B. Dodge manager. We know about every other manager in the Northwest, but while we do not know Mr. Dodge, we hear him spoken of highly, and we have no doubt the coming year will be a successful one. The Puyallup Valley is recognized as being the greatest raspberry and blackberry district in the country.

ASHLAND Fruit & Produce Association of Ashland, Oregon, recently held its annual meeting and elected the following directors: E. V. Carter, W. S. Ball, S. F. Johnson, J. D. Bolton and E. D. Briggs. If Mr. Briggs can grow fruit as well as he does other things, he can't be beat, and we have no doubt he can, because he does everything well, and growing fancy fruit in Southern Oregon is dead easy. The Ashland Association has a reputation for fine fruit well packed.

GRAND Ronde Valley Fruit Growers Union was organized last fall at La Grande, Oregon, and E. Z. Carbine, a well-known grower and orchardist of that valley, was selected manager, who resigned in favor of H. Ferbrache; L. Oldenburg, president. The organization was started on the right basis, being determined to pack fruit properly, and market no culls. It is a pretty good-sized union, as it had under its control about 1000 acres in bearing.

W. H. PAULHAMUS resigned as manager of the Puyallup Association, which position he has filled for many years with satisfaction to the growers, in a very able manner. Mr. Paulhamus is considered one of the ablest and shrewdest managers of asso-

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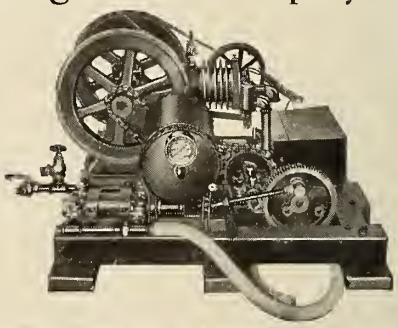
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ciations in the Northwest. He has recently been elected president of the Federation of Associations formed in the State of Washington, owns the finest place in the Puyallup Valley, and is also state senator, and consequently had a little more to attend to than any one man would want to look after.

HOOD River Fruit Growers Union of Hood River, Oregon, one of the very oldest in the state, organized in 1893, closed up the season's work long ago, as it deals only in strawberries and cherries. Strawberries made Hood River famous long before the Spitzenberg and Yellow Newtown played a part in the game. The net average on cherries was 12½c per pound to the grower. Strawberries were sold by the carload at $2.75 per 24-quart crate net f. o. b., with the demand daily several cars in excess of the supply. The editor of "Better Fruit" being manager, believes the subscribers can draw their own conclusions.

FRUIT growers around Roseburg, Oregon, have recently organized the Douglas County Fruit Growers Association which is comprised of progressive, enthusiastic members. Louis Barzee is secretary, and says: "The Fruit Growers Association will be a success. There will be more and Better Fruit raised in Douglas County than ever before. We want a name and must have a superior class of fruit. Let us boost not only this association and its purposes, but the whole of the Umpqua region of Oregon." We say you have the proper method. Mr. Fruit Grower of Umpqua, Oregon, and the right spirit. Success to you.

FRUIT growers of Granger, Washington, organized under the name of the Yakima Valley Fruit Growers Association, are getting well organized. The union will handle over $100,000 output the coming year. It has the interest of every grower at heart, and attends his every want, assuming extra work in behalf of its members, as it markets all kinds of produce, such as hay, potatoes, vegetables, etc. Mr. Roy Brock, an experienced fruit man of ability of Hood River, has just accepted the position of manager, and we feel assured that he will be popular, and we believe the association will appreciate a good manager.

HOOD River Apple Growers Union, of Hood River, Oregon, is now winding up the season's business by settling with the growers. The editor of "Better Fruit" being manager cannot on account of his extreme modesty (?) say very much outside of stating a few facts. This association was organized in 1903. In the year 1902 the growers received 85c for their Spitzenbergs. The first year the union was formed it got $2.00 per box; in 1904, $2.10; 1905, $2.12½ and $2.60; and in 1906, $2.25 to as high as $3.15, all net f. o. b. cash before being shipped, which is believed stands as the record for straight sales net f. o. b. shipping station.

WHITE Salmon Fruit Growers Union is located at White Salmon, Washington, just opposite Hood River. Formerly growers shipped through the Hood River Union, but as that district is growing rapidly, and as they will soon have a shipping station, as the Northern Pacific is building what is known as the North Bank (of the Columbia River) Railroad, which it is expected will be in operation inside of a year the White Salmon people believed it time to begin

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ALONG THE LINE OF THE GREAT NORTHERN RAILWAY *in*
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Make surveys, plans and estimates for sewer, light and power and railway plants, and furnish, subject to approval, plans, specifications, and estimates for all classes of buildings—public, private and mercantile. Special attention given to economic and slow-burning construction. Accuracy and economy guaranteed.
Davidson Bldg. Hood River, Oregon

selling their fruit under their own name, and building up a reuptation of their own. White Salmon district is like Hood River; it grows fancy fruit and its berries are very early.

ELLENSBURG Shippers Association has recently been organized at Ellensburg, Washington, by the fruit growers of Kittitas County. Ground has been bought upon which a warehouse will be built. In the meantime rented premises will serve for the present. Mr. J. P. Warner has been elected manager. The outlook is promising for a big business, estimated at 100 carloads the coming season. The union idea is popular. The growers of Kittitas County evidently know what they want; they know they want an association and co-operation, and they know why, because it means Better Fruit, Better Grading, and Better Prices for the grower.

GRANTS Pass Fruit Growers Union organized last fall at Grants Pass, Oregon, quickly jumped into prominence and is now one of the progressive and enthusiastic associations of the State of Oregon. Mr. Charles Meserve, the efficient manager, paid us a visit at Hood River, Oregon, during our biennial fair, for the purpose of learning all he could about association work, and it is our impression he went away "chuck full' of good ideas. If he did not, we don't know whose fault it was, as he kept us in the sweat box for three days answering questions and explaining. From recent reports it is evident the G. P. F. G. A. had a very successful year, and it is to be congratulated.

MEDFORD Fruit Growers Association, of Medford, Oregon, under the management of J. A. Perry, is reported as having done the largest business since its formation, and equally important is the fact that its prices were fancier than ever before. It is also stronger and larger. Good prices are but natural and to be expected in a community like the Rogue River Valley, where they grow fancy fruit and pack it properly. With the splendid results that are being obtained, it won't be long until the beautiful Rogue River Valley will be one vast sea of orchards, and oh, what a sight it will be to the easterner when he views it in bloom after emerging from a snow bank or blizzard.

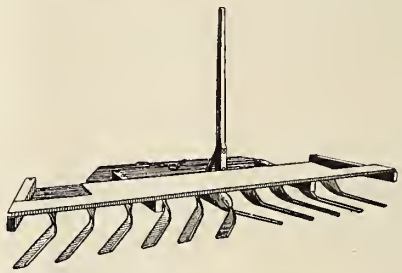
YAKIMA Horticultural Union is billed at the present writing early in April for a meeting of the stockholders for the purpose of increasing tne stock from $5000 capital to $40,000. This seems necessary to accommodate the increased business and permit of additional memberships. This union is one of the most successful in the State of Washington, and has the finest warehouse, a fine stone building, a cut of which appeared on the first page of the March issue of "Better Fruit." It has been very successfully managed. We are personally acquainted with Mr. Sampson, the manager, and know him to be not only a very able man, but a very popular one as well as an affable gentleman.

MILTON Fruit Growers Association of Milton, Oregon, is keeping pace with the times, by overhauling itself and reorganizing on a broader and larger basis. We believe they are on the right track. A few of the old associations that were organized years ago before the idea became popular, and before association management was thoroughly understood, had hard struggling. Local shippers in early days put up a successful fight, and buyers stood in. But nowadays it is different, the straightforward firms dealing in fruit, and the buyers with capital favor associations for a great many reasons, of which we would mention a few: Associations mean uniformity of pack, reliable grades and guaranteed as represented. There is no sharp practice about any associations—they give and want a square deal, and the honorable buyer wants nothing more.

CASHMERE Association of Washington is composed of growers in that vicinity who have withdrawn from the Wenatchee Valley Association. This latter association embraced the whole Wenatchee Valley, comprising the fruit districts around Wenatchee, Entiat, Lake Chelan and Cashmere. While we do not speak adversely, we presume the Cashmere people withdrew on account of the difficulty of their shipping and selling being managed in Wenatchee, which is some distance away. We presume they have acted wisely, but would suggest as a word of caution that they aim to act in harmony with the parent association and avoid conflicting complications and cutting of prices. But we presume all this will be avoided by the recently formed Fruit Federation of the State of Washington. While we don't know at present who will be manager, we will make a guess that the Fruit Federation will elect the president, W. H. Paulhamus, to this position, and will add if they do, success is assured.

NOTE—We would like to have every association of Washington, Oregon and Idaho, send us occasional reports during the coming season to appear in "Better Fruit." It will make interesting news, and be a help to every association, for the reason that most of the large buyers and commission men of the East as well as the West are getting a copy of "Better Fruit." It will be of value to you to have them know about your association, a letter of introduction, so to speak, and such news may get you a new customer or open up a new market.

The Kimball Cultivator



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HAVE you seen that easy running Empire Cream Separator? They say it's a marvel! It's the talk of the students at the dairy schools, both about it's light running and close skimming. It is just what you need if you have two or more cows. The price of these machines is from $50.00 up. Send your address and receive catalogue telling all about it.

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Order Your Fruit and Berry
BOXES
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PAINT PAINT PAINT

Paint is the cheapest insurance a man can get for the protection of his property. Did you ever notice how quickly a building which has not been painted will become dilapidated, moss-covered and weatherbeaten?
In the earlier issues of this paper we advised the use of our celebrated Phoenix Lime and Sulphur Liquid Spray for the protection of orchards against fruit pests. We now urge the use of our DUNNE'S PURE HOUSE AND BARN PAINTS FOR THE PROTECTION OF YOUR BUILDINGS. We have the most modern and best equipped paint manufacturing plant in the Northwest, and we manufacture all our paint fresh for each order.
Prices and color cards sent on application.

DAVID M. DUNNE COMPANY
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STOKELY'S CYLINDRICAL FRUIT CRATE—MADE BY THE CYLINDRICAL FRUIT CRATE COMPANY

STOKELY'S Cylindrical Crate has solved the shipping problem of fruits, vegetables and eggs. It is a combination of beauty, lightness and strength. It carries fruit through to its destination in a perfect condition, as each piece of fruit is in a separate cell and receives no pressure from the other fruits. No matter in what position the crate is placed, therefore, the fruit must reach its destination as perfect in shape as when taken from the tree or vine.

The crate and partitions are so systematically perforated that each piece of fruit is perfectly ventilated.

Should any piece of fruit be overripe and the juice ooze out, it is immediately evaporated, leaving the cell dry, affecting no other fruit in the crate.

The heads are so ingeniously arranged that they can be taken out and put in without injuring the fruit, or head of crate—a very great advantage in examining and re-shipping fruit.

This crate is made entirely of veneer, except the partitions, which are made of strawboard.

The heads are re-inforced, making them strong and light.

The crate is so constructed that the veneer cannot be pried apart and the fruit removed in transit.

There is as much difference in the condition of fruit arriving at destination, in the Stokely Crate and that arriving in other crates or baskets, as the difference between day and night.

Fruit will not heat and mush up in this crate.

In using this crate, cold or hot air can be forced through a cargo of fruit, and come in contact with each piece of fruit in every crate in the cargo, equalizing the temperature; the same being true in ventilated cars.

Fruit shows up much nicer in this crate than in old-style square packages.

This crate holds the same number of fruit as other standard crates.

The retail grocer or merchant can cut off one-eighth, one-fourth, one-third or one-half box of fruit, or eggs, and dispose of same without repacking. (See illustration, colored boy cutting off sections.)

In loading and unloading, this crate can be rolled many times without jarring the fruit, where square packages get a pitch and heavy jar, which injures the fruit in each and every instance.

In falling off a truck, this package will not skew down or break in pieces.

At least three-fourths (¾) of the fruit that arrives at destination in bad condition in the old style square packages and baskets will be saved by shipping in this crate.

The transportation companies and commission houses will be relieved of the abuses they get.

The retail grocers and fruit dealers will get more sound fruit out of a crate.

The producer will be happy when he gets his returns, as the difference in returns will exceed the entire cost of the Stokely Crate, and swell his bank account besides. In case of a glutted market, fruit can be held in this crate much longer without decaying.

This crate is very easily formed.

Much more satisfactory to handle in packing house, loading and unloading wagons, cars or boats.

No rough corners.

Never comes apart in shipping.

In fact the Stokely Cylindrical Crate has every advantage from every point of view.

The three-hoop crate, No. 1, is a whole crate, not intended to cut off into eighth, quarter or half boxes.

The four-hoop crate, No. 2, can be divided by sawing the veneer between the hoops into two boxes, or half crate each.

The eight-hoop crate, No. 3, can be divided by sawing the veneer between the hoops into four boxes, or quarter crates each.

Crate No. 4 can be divided by sawing the veneer between the hoops into eight boxes, or one-eighth crate each. No. 4 crate is not represented by illustration.

These crates are made for all kinds of fruits, vegetables, eggs, etc.

Nos. 2, 3 and 4 cost a trifle more than No. 1, but the fruit sells for a higher price, as the grocer or retail merchant can sell small packages without repacking. (See illustration, colored boy cutting off the section.)

All crates are filled by commencing to pack at middle heads. Pack one-half of crate, put in the head, then turn crate and pack the other half.

It is very simple and easy to give a customer any part of a crate of fruit or eggs wished. Simply saw the thin veneer between the hoops, and the inside heads hold the fruit in sections.

After the fruit is taken out, the sectional boxes can be used for the grocer to deliver goods, and the farmer to take eggs to the country store, and many other uses.

The illustration on the cover page shows how different kinds of fruit and eggs are packed—oranges, tomatoes, strawberries, eggs, grape fruit, plums, cherries, kumquats, Japan persimmons, peaches, Irish potatoes, apples, etc.

The crate with the oranges, peaches and persimmons has one section of the veneer taken out to show the horizontal layers of fruit and cells in crate, and to illustrate the complete ventilation.

The illustration of parts as shipped shows how the material for this crate is shipped to the grower from factory.

Nos. 1, 3, 4 and 5 represent the apertured perpendicular partitions between the fruit.

No. 2 represents the apertured horizontal partitions between the layers of fruit.

No. 6 represents the apertured veneer inside heads.

No. 7 represents the apertured veneer sides of crate.

No. 8 represents the apertured outside heads reinforced.

No. 9 represents the hoops.

Send for price list.

W. R. STOKELY, Patentee.
St. Augustine, Florida.

OREGON SPRAY & GAS CO.
Portland, Oregon, January 26, 1907.

Better Fruit Publishing Co., Hood River, Oregon.

Gentlemen: In looking up the requests coming through advertising I find this result: Total number of inquiries, 80. Out of this number there were thirty-nine which made no mention of where they saw the "ad." Out of the remaining forty-on ethere were twenty-eight from "Better Fruit," making the percentage from your paper just about 70. This is a good showing. Very truly yours,

OREGON SPRAY & GAS CO.,
Per F. A. Frazier, Secretary.

BOLTON'S
ELECTRIC FROST ALARM
THERMOMETER

An orchard thermometer that automatically rings a bell on the approach of frost. Used by fruit growers everywhere. Address,

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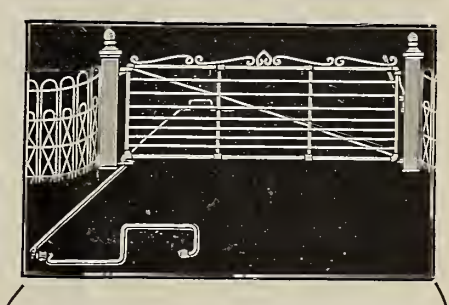

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BETTER FRUIT
HOOD RIVER, OREGON

A Monthly Illustrated Magazine Published in the Interest of Up-to-date Progressive Fruit-Growing & Marketing

All Communications should be Addressed and Remittances made Payable to the Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher
W. H. WALTON, Associate Editor
CHRIS GREISEN . . . . Solicitor

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ADVERTISING RATES FURNISHED ON APPLICATION

Entered as second-class matter December 27, 1906, at the post office at Hood River, Oregon, under the act of Congress of March 3, 1879

BETTER FRUIT now presents to its ardent admirers the May edition, number 11. We have made good in every number, and downed the "knocker." Before commencing its publication, the editor consulted a number of journalists, newspaper and magazine men, unfolding the plan of "Better Fruit," and in no instance met with a word of encouragement. Friends of years' standing, who were known to be men of good business judgment and had achieved success, were consulted, and advised against it. Some editors and managers of other horticultural papers gave "Better Fruit" six months to live at most. One old newspaperman said the paper would sink $15,000 before it got on a paying basis. These friends were in error simply because they did not realize that the orchardist is a progressive, up-to-date, wide-awake business man, who wants the best. Our contemporary friends may have been prompted by some feeling of jealousy — the editor doesn't mean all of them. In spite of it all, however, he never lost one bit of enthusiasm, or flagged for one moment in his energy, or allowed any one to cover him up with a wet blanket. Wet blankets don't keep one warm. "Better Fruit" has been placed on an original basis. The editor is a practical fruit grower and manager of both the Hood River Growers Unions, and had read nearly fifty horticultural papers for four years. In doing so the idea of "Better Fruit" was born. In reading the ordinary fruit paper he found many faults predominant. Articles were too lengthy on unimportant subjects; they had too many personal experiences of no general value; long accounts of horticultural meetings, consisting of details and information relative to the meetings themselves, which were of no practical value to the grower were used; many columns were devoted to cooking, fashions, jokes and nonsensical romances. But worse than all this was the disgusting impression created by fruit papers claiming to disseminate useful information, which had their columns filled to a greater or less extent with quack and fake ads. The editor saw what he did not want, and knew what kind of reading matter and information he did want, and considering himself at least fairly intelligent and practical, felt that he was right. Moreover, he believed that every orchardist growing fruit commercially felt more or less the same way.

Therefore he originated the plan which "Better Fruit" has followed out in every number, namely, the publication of a paper that was clean and free from quack ads., containing thorough articles on important features of fruit growing. He has aimed to have them practical; to eliminate lengthy personal experiences, and reference to our back numbers will call your attention to a few of the most important, such as Packing, San Jose Scale, Codling Moth and Walnut Culture.

Another idea was to use book paper instead of cheap newspaper, and make the paper attractive typographically; to illustrate it with the best of half tone cuts, and last of all to cut out all departments on stock, poultry, gardening, cooking, fashions, jokes and stories, and instead give the grower what it is believed he wants—a first class paper, the only one of the kind, devoted exclusively to commercial fruit growing, and filled with articles from practical and successful men.

"Better Fruit" seems to have filled the bill, for without canvassers or cheap premiums, but in response to sample copies and through our enthusiastic friends, it has grown from 24 pages to 28, then to 32, then to 36, and now to 40 pages; its ads. have increased, many unsolicited, its advertisers are getting splendid results, its subscribers are not only satisfied but pleased and enthusiastic in their praise, as the occasional letters published indicate most forcibly, and the subscription list has grown in nine months from 0 to 3500 paid subscribers.

IT is with no small degree of satisfaction that the editor of "Better Fruit" calls attention to its column of association doings. As manager of the Hood River Apple Growers and Fruit Growers Unions, he knows the good work a strong association can accomplish. It is therefore with pleasure that he notes that more associations have been organized in the past few months than existed before all told. His interest in these associations has been more particularly created by the fact that in almost every instance where a new organization was formed he has been consulted by letter for information, advice and copies of the by-laws, constitution and contracts of the Hood River unions. It has been with growing interest that he has watched the awakening among fruit growers in regard to organization, and where possible he has supplied all information that could be embodied in a letter. He has also been visited by many representative fruit growers in quest of information in regard to the formation of associations, and so great has become the demand and so popular the idea that it had reached the stage where it was impossible to supply it by correspondence. It was this that induced the publishers of "Better Fruit" to issue the association number which appeared in March. In it was printed the by-laws, constitution, articles of incorporation and contracts of many of the best and largest associations, and also additional information of great value to districts contemplating organization.

"Better Fruit" from its first edition has been the uncompromising exponent of organization for the fruit grower, and the editor has delivered many addresses on the benefits of the association and its proper management throughout the Northwest. Consequently he takes a pardonable pride in being able to give such a splendid account of association work and also in the fact that the unions at Hood River have been able to be of such assistance to their fellow growers.

L. C. Smith & Bros.
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(Writing in Sight)

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THE BEST OF
ORCHARD AND GARDEN TOOLS
A SPECIALTY
J. R. NICKELSEN
HOOD RIVER, OREGON

NO feature of orcharding is less understood than pruning, and none so difficult to reduce to words in writing, and it might be added, it is about the hardest part of orcharding to show a man or tell him. And again, it is one of the parts of the business where successful men have extremely different ideas. The January edition contained a splendid article on the subject. But reading won't enable you to prune; however, it will give you ideas, and help you. We believe a good suggestion is to always examine trees of successful growers wherever you see them. When a neighbor who knows his business is pruning, climb over the fence and watch him, help him if he will let you. If you have a friend who knows his business, get him to come Sunday (if you can't get him any other day) and prune a few trees as a model for you, and when he is pruning have him tell you why he cuts off each particular limb and why at a certain place, and also why he doesn't cut others. Whenever you see a man pruning, as you drive by, go hitch your team and go in and see what he is doing and why, and get his general ideas. We believe we have given you advice that will help you more than if we wrote or published an article by an expert a yard long, and therefore will conclude with a few general remarks.

The same pruning does not apply to all kinds of fruit or all kinds of varieties of one fruit. You must know the characteristics of the tree.

Pruning during the dormant period has a tendency to produce wood growth.

Pruning during the growing season stimulates fruit growth, and has a tendency to check wood growth.

In pruning during the dormant season, it is well to delay as near the time when growth will begin as possible, because the cut limbs will heal over more quickly.

Summer pruning is gaining in popularity.

Pruning should be done regularly each year; this will not disturb the tree balance, and have a tendency to make your yield more regular.

Each branch should be cut clean, and close to the parent branch, and it is advisable to paint large limbs which have been cut with white lead.

In heading back, cut to a bud, if you want the limb to head out, leave the bud pointing that way. Vice versa, if you want it to head in or up, select your bud accordingly. After pruning be sure and collect all limbs and branches removed and place in a pile to burn as soon as dry enough. If there is any disease on the limbs removed burning will destroy it; if there is any left on the trees, your spraying, if done right, will get that.

THE article on the Stokely Fruit Crate, handsomely illustrated in colors, appears in this issue of "Better Fruit," its first appearance in any fruit paper. Don't fail to read the article. There is not much danger, however; you can't overlook it, because it is so handsomely illustrated.

THE Perkins Fruit Bill became a law for the State of Oregon at the last legislature. Attention is called to the fact that "Better Fruit" was the first horticultural paper to publish the law, which it did in its February edition. It is a model law for the fruit grower, and one that should be adopted by every fruit state in the Union. If you are interested in it on behalf of your own State, we will be pleased to mail you prepaid the February edition of "Better Fruit," which contains it in full.

MR. E. A. FRANZ, who has been associated with "Better Fruit" since its beginning, has retired from the firm, Mr. E. H. Shepard having purchased his interest in Better Fruit Publishing Company. While we regret the change, we wish to congratulate him upon assuming an active interest in one of the largest and most prosperous mercantile firms in Hood River, and wish him success, for he was an earnest worker for "Better Fruit."

WE desire to impress upon our readers the fact that our columns are open to any one furnishing an interesting and reliable article or letter on any feature of the fruit business. Do not be modest, but send in your experience, or your opinion. We have done and are doing a great deal, but we cannot cover the whole field, or every feature without your assistance, so we ask you to roll up your sleeves, write something, and help to make "Better Fruit" still better.

BETTER FRUIT was the first horticultural paper to publish the Oregon fruit laws, the Washington fruit laws in connection with the commission business, and the draft of the laws contained in this issue, which we hope will become national, and which were drawn and adopted by the Northwestern Fruit Growers Association at Seattle, 1907.

IT is not as many people think. Results don't come from the number of times your ad. is printed, but depends on the number of times it is read. One advertiser received more business through "Better Fruit" than he did from a similar ad. in a big daily with many times the subscription list.

BETTER FRUIT took up this subject in the first edition, the July number, 1906, and published a resume of the fruit laws of the Dominion of Canada, which are about the only general fruit laws in existence, and the best.

OUR friends are legion. Hundreds of letters attest that "Better Fruit" is just what the grower wants. Hundreds every month say it is the best horticultural paper in America. We thank you all sincerely.

WE want to improve "Better Fruit" in every way possible, and therefore will be glad to receive criticisms and suggestions. We want to give you what you want; so please let us know.

WE have just received a sample of the "Friend" spray nozzle, and and from what is claimed for it, we believe every grower should send and get one. It looks good to us.

IF you want to get the latest and best of everything pertaining to the fruit business, and get it quick, subscribe to "Better Fruit."

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Where to Buy a
PIANO

When Sherman, Clay & Company, the old Pacific Coast Piano House, which has been doing business at the corner of Kearney and Sutter streets, San Francisco, for over thirty-five years, purchased the piano business of Allen & Gilbert-Ramaker Co., it was everywhere admitted that it was the most significant transaction ever announced concerning the music business of the Pacific Northwest.

Important, because Sherman, Clay & Company are so well known as a staunch, reliable firm. They have a one-price system. Every piano is marked in plain figures. A child can buy a piano from Sherman, Clay & Company just as safely as can a state senator, and at the same price. They are Pacific Coast agents for the Steinway piano; also many other standard makes such as the Knabe, Everett, Mason & Hamlin, Hardman, A. B. Chase, Fischer, Packard, Conover, Ludwig, Kingsbury, Estey, Emerson, Sterling, Wellington, Huntington and Mendelssohn. Also Estey, Packard and Chicago Cottage Organs, Piano Players and Victor Talking Machines.

When you visit Portland, Spokane, Tacoma, Seattle, Everett, Bellingham or San Francisco, you should call and see the pianos exhibited by Sherman, Clay & Co. Their Portland store is opposite the postoffice, Sixth and Morrison Sts.

FRUIT PROFITS IN NINETEEN SIX OUTLOOK FOR NINETEEN SEVEN

SHIPMENTS of last year's fruit have about been completed, and returns from the various districts show that growers enjoyed a most profitable season. Believing that it will be of interest to our readers to show some of the profits made in fruit during the past season, we print below a number of reports from various districts:

At Rogue River the Fruit Growers Union, according to the Oregon Journal, shipped 315 cars of apples and ninety cars of pears, the apples averaging $2.00 a box and the pears $1.50. The total for the whole shipment was $500,000. Most of the apples were Newtown Pippins, and were sent to London. The largest individual yield is reported from the ranch of S. L. Bennett, who is said to have taken $1360 from one and a half acres, or almost the equivalent of $1000 an acre. The Rogue River Union located at Medford, reports the most successful season in its history.

Grand Junction, Colorado, reports the most profitable year in its history as an apple-raising center, the crop being large and prices received far above the average. The average for the whole crop, including everything that was saleable, is said to have been 82 cents per box. Much higher prices were, however, obtained for the better grades of fruit, and Jonathans there brought the top notch price for that apple paid anywhere.

Hood River opened up a new territory this year as a market for its apples, having shipped several thousand boxes to Siberia, some of them going as late as April 8.

While no returns of the entire crop at Wenatchee are available, the yield was a big one, and big prices were realized. The prevailing prices in the early part of the winter were $1.90 for Spitzenbergs, and $1.75 for Newtowns; Jonathans brought $1.00 and Ben Davis 50 cents. Later in the season there was a raise of from 50 to 75 cents per box on some of the varieties. Wenatchee also opened a new market for her apples this year. 3000 boxes being taken to Australia, where they were sold at a very profitable figure. The cost of transporting the fruit was $1.00 per box and 25 cents duty. The apples were disposed of at Melbourne, and were placed on the market just as the apple trees in that country were budding. The crop in Australia is harvested in April. Fruit growing at Wenatchee is more diversified than in most other sections, prunes and peaches being grown with much success, as well as apples. One prune grower cleared $4000 on nineteen acres, which were sold to the Fruit Growers Association for 50 cents a crate. H. D. Hall, a Wenatchee grower, recently made an affidavit before a notary public that he obtained 240 boxes of peaches from twenty-two trees, for which he received $1.00 per box, or at the rate of $1200 per acre, the trees occupying but one-fifth of that space.

At Union, Oregon, W. J. Townley, the owner of the largest bearing orchard

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near that place, sustained a loss of $4000 last season by not being able to obtain cars and help to ship his fruit. His shipment was twelve cars of apples, eight cars of prunes and plums, and seven of pears.

From Cashmere, Washington, comes the report that twenty-eight Winesap apple trees owned by O. M. Torrence, produced 436 boxes. Of these 349 boxes were marketed at $2.00 a box, the income from them being $698, or an average of $24.93 a tree. An orchard of these trees set 160 to the acre would, on this basis, bring in a revenue of $3880 per acre.

Geo. P. Hall, who has fifteen acres in peach and apricot trees near Mountain Home, Idaho, last year cleared between $8000 and $9000. Mr. Hall ships annually about 10,000 cases of fruit, at 80 cents a case delivered at the railway station in carload lots. From 220 trees he got 2900 cases of fruit. Altogether he has 3000 trees in bearing.

At Freewater, Oregon, the Shields Fruit Company shipped twenty-five cars of Ben Davis apples on March 22, for which they got $1.00 a box. The apples were grown on the ranch of L. L. Ragsdale, who last year raised 5000 boxes.

E. O. Wilson of Prosser, Washington, has 100 acres in bearing in the Euclid district, on which he raised last year 12,000 boxes of apples. Mr. Wilson will set out 30,000 peach trees this spring on some additional acreage which he has secured.

Yakima is going into the walnut business, and ten acres of trees will be set out there this spring, according to Fruit Inspector Joseph Brown. Walnut trees are said to do exceedingly well there, and those who have tried it have raised 250 to 300 pounds to the tree. The nuts bring 20 cents a pound, which is said to leave a handsome profit to the grower.

The Loganberry is engaging the attention of growers at Kelso, and the coming season will see a number of acres devoted to raising them.

The cold weather of the past winter is said to have aided in destroying fruit tree pests in Whatcom County, Washington, and a bigger crop is expected there this year than ever before. County Fruit Inspector Canfield announces that 10,000 trees have been set out during the fall and winter, making a considerable increase in the acreage.

A big fruit crop is looked for this year in the Walla Walla district, and trees are said to have wintered better than in several years. Fifteen boxes of infected fruit were recently destroyed there by Inspector C. L. Whitney, who has served notice on Umatilla County growers, from where the fruit is said to have come, that they will be prosecuted if any more of it is sent to Walla Walla for disposal.

Idaho will this year invade France as a market for its fruit, having obtained information from the United States consul at Lyons as to prices and market conditions. Heretofore Canada has supplied French markets with American fruit.

Growers in Clackamas County, Oregon, are advocating the planting of cherry trees. The Bing, Lambert, Harkins, Lewelling and Black Republican are being talked of as the most most favored for fresh shipments, and the Napoleon and Royal Ann for canning. It is said that this fruit grows to perfection there, and that there will be no trouble in disposing of it at profitable prices.

Inspector Brown expects a bumper fruit crop in the Yakima Valley this year and places the value of the product at $1,000,000. Apple, peach, plum and cherry trees, he says, are in prime condition, and 50 per cent less disease is prevalent in orchards than existed three years ago.

"The best prospects for fruit in many years," is the remark being made by fruit men in Idaho. Up to the present

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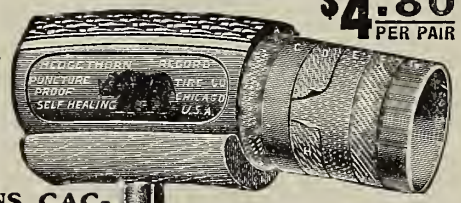

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time the weather conditions there have been the most favorable in years.

Crop reports from Chelan County are to the effect that a most favorable year in the fruit industry is looked for, and that trees have wintered with very little loss. The Wenatchee Valley is reported to have come out unscathed also.

The Milton-Freewater (Oregon) Valley growers report no damage from the winter's rigors, and are looking forward to the largest fruit crop that they have ever harvested. Under normal conditions they expect to ship 500 cars of fruit this year, which it is estimated will bring to their valley $500,000. A marked increase has also been made in the acreage.

In the Spokane Valley no damage was sustained by growers during the winter, and trees are said to be looking better than in several years. Unless unusual weather conditions should come later, a big crop is looked for.

Pullman and Colfax both report bright prospects for a successful fruit season, and these conditions are said to prevail all over the Palouse country. Whitman County expects to ship 1000 cars, valued at $1,000,000. The output from Pullman is expected to be between 250 and 300 cars, worth all the way from $250,000 to $400,000. No winter damage is reported and veteran growers say a big crop is now assured.

In Umatilla County, Oregon, farmers are being urged to go into the fruit business, and it is probable that this year will see several extensive orchards set out.

Charles Conway, of Kennewick, claims a yield of $300 per acre on a thirteen-months old strawberry patch three acres in extent, and says he expects this year to take between $500 and $600 an acre from it.

F. H. Hopkins, proprietor of the Snowy Butte orchard, located near Central Point, Oregon, claims the distinction of receiving $2.38 per box for a car of apples shipped by him to London last season. The car contained 450 boxes of four-tier and 150 boxes of four and a half tier Newtown Pippins.

To Medford, Oregon, belongs the honor of having received the highest price ever paid for a carload of pears. The fruit was raised by J. W. Perkins in the Rogue River Valley, and were of the Comice variety. For the carload he received $3450 gross and $2707 net. They were packed out in half boxes containing from thirty-five to forty pears. For a full box of fifty pounds Mr. Perkins received $5.00 a box net.

In the Willamette Valley M. O. Lownsdale is reported to have received the highest price paid for apples. In a dispatch in the Oregonian he says that he kept a large quantity of them until the last of March and got $2.50 to $3.10 per box for Spitzenbergs, according to size. Baldwins were sold from $1.00 to $1.65, with an average of $1.27 for car shipments. Ben Davis, he says, brought from $1.00 to $1.35 f. o. b. cars.

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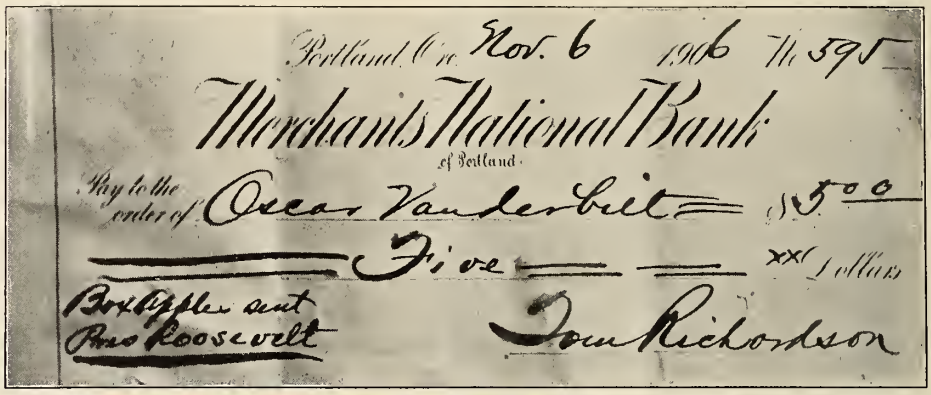
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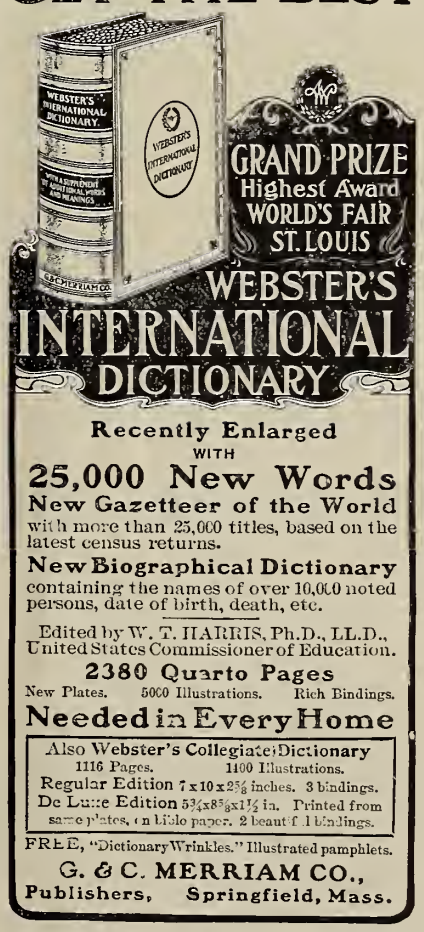

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Offers especial inducements to the trained horticulturists of other fruit districts of the Northwest, for the reason that lands have not been boomed; developed orchard lands are held at what look to trained men as being exceptionally low figures; and the great diversity of productions enables the fruit grower to guard against possible failure of an entire crop by planting apples, pears, peaches, apricots, table grapes or cherries with equal certainty of the land producing large returns. Like all portions of the Northwest, the country is "spotted," the very best frequently alongside of practically worthless land. We will guarantee to give you the benefit of 25 years' experience in the valley and in fruit culture, and to steer you right. Any fruit grower, any banker or business man of the valley will convince you of the fact that you will get a square deal through this firm. Right now is the time to investigate the Rogue River Valley.

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STRAWBERRIES
PEACHES
APPLES AND
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Solicit Your Consignments

Reliable Market Reports *Prompt Cash Returns*

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BERRIES, CHERRIES, APRICOTS, PEACHES, PEARS, PLUMS, PRUNES, CANTALOUPES AND APPLES

WE USE REVISED ECONOMY CODE

10,000,000 Strawberry Plants

75 Varieties

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All plants are fresh dug when ordered, guaranteed true to name, and to give satisfaction. Our prices are reasonable. Send for our catalogue today.

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Everybody here eats Hood River Strawberries

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FRUIT FACTS

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Shipments last year aggregated 1,000 cars. We will have more this year and still more next.

Fruit noted for flavor and keeping qualities. No worms.

We will have fifty cars of fancy Spitzenbergs and Newtowns this season.

Eighty per cent of fruit raised in Wenatchee, Entiat and Columbia Valleys will be shipped by the

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To the growers of fruit, grapes and berries at Kennewick, Washington. Did you ever stop and think what early climate means? It means strawberries ripe May first, and $15 per crate. It means ripe gooseberries in April, and $3 per crate. It means ripe peaches July first, and $2.50 per box. It means ripe apricots in June and $1 per basket. It means easy money to the grower, and a full pocketbook to the fortunate man who farms Kennewick Land. Kennewick is a delightful place for a home, and is rapidly filling up with satisfied people. There is more than $200,000 in concrete buildings now erected or in course of construction in Kennewick. The Shipping facilities are the very best. We have two railroads and another now building, and an open river to Portland. Kennewick is in the midst of a vast area of irrigated lands, and the choicest lands can be had from $125 to $200 per acre on easy terms, all with perpetual water right under the Northern Pacific great canal. Would you know more about the great Kennewick country? Write for photographs and maps to the

KENNEWICK LAND CO., Kennewick, Washington

The largest and oldest Real Estate firm in the Great Columbia River Early Fruit Belt

THE HORSE BUYER

Who used as little judgment as many tree buyers, would be considered an "easy mark." He would have "horses" enough on his hands in a few hours to keep several canneries in operation for months. The horse buyer who would buy any equine solely by price, just so he had a leg at each corner and a head and part of a tail, is not half as foolish as the man who owns land worth from $100 to $400 an acre, and who buys trees of the "cheapest" seller regardless of quality. At best, the horse buyer's troubles would be over in a few months, for he is not tying up a three or four hundred dollar investment for the rest of his life with every ten dollar spavined horse. The orchardist who owns valuable land should be as critical of what grade of fruit trees he gets as he was in purchasing his land; if anything, more so; for a good tree can be made to bring excellent returns on common land, while a "scrubby tree" is always a scrub, even in the finest soil. Our trees are grown on the Yakima Indian reservation under unsurpassed conditions of soil, climate and moisture. Growing and selling trees is our business. We think we know how, and our customers are positive of it, for the proof is in the hands of thousands of them. We are not troubled with pest or disease, for we have no old orchards within miles of our plant. If our salesmen fail to find you drop us a line. We have them almost everywhere, but want more. IF YOU'RE OPEN TO ENGAGEMENT, WRITE US.

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Under irrigation at prices and terms that will please you. Write for price list

Timothy, Alfalfa and Stock Ranches
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A FATAL MISTAKE

is made by those who cling to old methods in marketing the products of their fields and orchards. Conditions are changing, new business methods are being adopted. *A revolution is at hand* and we wish to call the

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